

Title: NORTH ANNA POWER STATION

POSSIBLE WILLFUL USE OF NON-NUCLEAR QUALIFIED COATING  
MATERIAL ON CONTAINMENT DUCTWORK AND FALSIFICATION OF  
QUALITY ASSURANCE DOCUMENTATION

Licensee:

Virginia Electric and Power Company  
P. O. Box 26666  
One James River Plaza  
Richmond, Virginia 23261

Case Number: 2-84-015

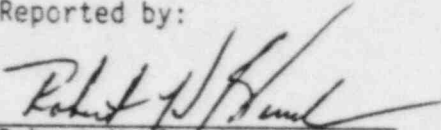
Report Date: April 30, 1985

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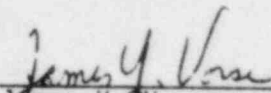
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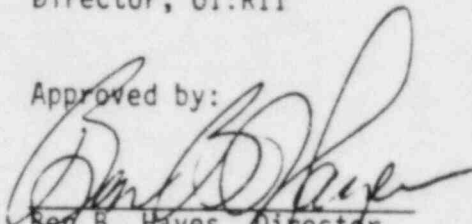
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## SYNOPSIS

This investigation was initiated pursuant to an allegation that non-nuclear qualified coating materials were deliberately applied to the galvanized steel Air Cooling and Purging System (Ventilation ring ductwork) in both the Units 1 and 2 containment buildings during December 1982 and April 1983, respectively, at Virginia Electric and Power Company's (VEPCO) North Anna Power Station (NAPS), Mineral, VA, hereafter referred to as "the licensee." Inquiries to determine the extent of licensee managements' knowledge of and involvement in these alleged coatings improprieties were conducted. Applicable regulatory requirements, standards, NRC guidance documentation, NAPS procedures and the safety analysis report were identified and reviewed during the investigation process. Background data revealed that a Confidential Source alleged in April 1984 that improper coating materials (epoxy finish coat over an enamel base coat) had been deliberately, and with NAPS supervisory concurrence, applied to the ventilation ring ductwork in Units 1 and 2 to mitigate the effects of corrosive borated water leaking onto the galvanized steel surfaces. After substantive evaluations of the allegation by Region II, NRC staff members and the NAPS Resident Inspector, the licensee was requested to analyze test coupons selected from portions of the ventilation ring ductwork. In July and August 1984 correspondence and meetings between NRC and licensee officials revealed that the base coat applied over the galvanized steel ventilation ring ductwork surface in Unit 1 was non-nuclear qualified and the coating materials applied to the Unit 2 system, although nuclear qualified, were not compatible with the galvanized steel surface. Technical remedial actions regarding these improprieties were implemented by the licensee and approved by the NRC staff personnel associated with this matter.

During the investigation, Region II, NRC staff members reported that the ventilation ring ductwork coating projects had failed to receive a NAPS engineering evaluation for health and safety implications, which possibly accounted for the painting discrepancies. An NRC official advised that a NAPS Quality Control inspector involved in these coating projects informed him that he (inspector) was "overruled by someone in engineering" when he objected to coating galvanized steel surfaces. The initial allegor stated during interview that he informed the NAPS Construction Supervisor (Coatings) that the base and finish coating materials he selected were non-nuclear qualified, incompatible and not suitable for coating a galvanized steel surface. NAPS contract painters interviewed during the investigation related similar conversations with the same NAPS Construction Supervisor and advised that in spite of their objections, they were directed by this individual to perform coating activities with non-nuclear qualified materials over a galvanized steel surface. Some paint personnel also advised that the NAPS Quality Control (QC) Inspectors assigned to independently verify the craft coating activities did not conduct inspections in the proper manner and they concurred with false and inaccurate data contained in the QC documentation associated with these two projects.



Neither the paint manufacturer nor representatives of his company recalled any contacts with the NAPS Construction Supervisor (Coatings) regarding paint compatibility or qualification for galvanized steel or in-containment use.

NAPS Construction Department officials above the level of the Construction Supervisor (Coatings) categorically denied that they were aware of deficiencies in the ventilation ring ductwork coating process or discrepancies in the record keeping requirements associated with these projects until they were notified of the same by the NRC in July 1984. Other officials at the NAPS facility, including management personnel from the Maintenance, Operations, Engineering and Quality Assurance Departments also claimed no knowledge of coating or associated record keeping improprieties until they were informed by the NRC. Two NAPS Quality Control inspectors assigned to the ventilation ring ductwork coating projects acknowledged upon interview that they failed to perform inspections of these projects as required by applicable procedures and regulations and they signed and dated QC documentation without performing independent verification to ensure that the activities were completed in the manner indicated. They acknowledged that they collaborated with the NAPS Construction Supervisor (Coatings) to certify inaccurate product identification and/or surface preparation data on the QC documentation associated with the ventilation ring ductwork coating projects. Licensee documentation, records and/or printed data supplied by various sources during the investigation also corroborate statements by painters that incorrect base coat paint identifier information is recorded on QC documentation associated with the Unit 1 ventilation ring ductwork and that "surface preparation" activities were not completed in the manner indicated by QC documentation. No substantial evidence of licensee management involvement in or knowledge of coating and/or record keeping improprieties above the level of the Construction Supervisor (Coatings) was revealed during the investigation.

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## APPLICABLE REGULATIONS

A review of 10 CFR regulations, standards, NRC guidance documentation, North Anna Power Station (NAPS) procedures and the Updated Final Safety Analysis Report identified those which are applicable to the investigation.

10 CFR Part 50 (Domestic Licensing of Production and Utilization Facilities), Appendix B, Quality Assurance Criteria For Nuclear Power Plants and Fuel Processing Plants, requirements are pertinent to the investigation. Licensee's responsibilities described in Criterion I, "Organization;" Criterion II, "Quality Assurance Program;" Criterion III, "Design Control;" Criterion VII, "Control of Purchased Material, Equipment, and Services;" Criterion X, "Inspections;" Criterion XVII, "Quality Assurance Records;" and Criterion XVIII, "Audits," pertain to the allegations which initiated the investigation.

American National Standard Institute (ANSI) N101.4-1972, entitled "Quality Assurance For Protective Coatings Applied to Nuclear Plants" defines and provides "a common basis for the quality assurance of protective coatings applied to nuclear facilities." Specifically, Sections 2, 3, 4, 6 and 7 of this standard are applicable to the investigation.

U. S. Nuclear Regulatory Commission Regulatory Guide 1.54, entitled "Quality Assurance Requirements For Protective Coatings Applied To Water-Cooled Nuclear Power Plants," references the requirements and guidelines included in ANSI N101.4-1972. This document states that guidance contained in ANSI N101.4-1972 for protective coatings applied to "...zinc-coated (galvanized) steel... surfaces of water-cooled nuclear power plants" is "generally acceptable" and provides "an adequate basis for complying with the pertinent quality assurance requirements" of 10 CFR Part 50, Appendix B.

The NAPS Updated Final Safety Analysis Report (UFSAR), Section 3.8.2.7.6, entitled "Protective Coatings (Paints)," contains requirements for coating "exposed concrete and carbon steel surfaces within the containment boundary." This section also states "...it is also necessary that protective coatings remain intact if subjected to the environment associated with postulated..." Loss of Coolant Accidents (LOCA's). Tables 3.8-10 and 3.8-11 list nuclear and non-nuclear qualified coatings, respectively, used inside containment.

Investigator's Note: The UFSAR does not contain specific guidance regarding the coating of galvanized steel surfaces inside the containment boundary.

North Anna Specification (NAS) 1016, entitled "Painting - Part II, Application of Protective Coating Materials Within The Containment," defines the requirements for "materials and workmanship" for field application of protective coatings... within the reactor containment liner boundary. The contents of Sections 1.0, "Scope;" 2.0

"Applicable Documents;" 3.0 "Requirements," and 4.0 "Quality Assurance" are all applicable to this investigation. Attachments to NAS-1016 identify nuclear qualified coating materials and schedules for in-containment painting.

Virginia Electric and Power Company Multiple Power Projects Quality Control Instruction QCI 11.1 establishes the program for "controlling protective coating materials, surface preparation, and application of protective coating to assure that they conform to the governing specifications," (NAS-1016). Sections 3, "General" and 4, "Procedure" specify responsibilities of both the Construction Supervisor and the QC Inspector regarding the entire coating process. This instruction further states that the Construction Supervisor shall complete and sign the Protective Coating Surface Preparation Record (PCSPR), (Attachment 5.2 of QCI 11.1), and the Quality Control Inspector shall assure that all procedures therein have been performed according to the specifications and instructions.

Copies of all the regulations, standards, guides, procedures, instructions and/or reports referenced in this section of the investigation report are being retained in the case file.

Investigator's Note: According to numerous licensee and contractor personnel interviewed during the investigation, NAS-1016 and QCI 11.1 were initially developed and promulgated as coatings procedures with plant construction orientation. These individuals advised that, although they were subsequently adapted as plant maintenance procedures, in their opinions they have not been adequate for this purpose. After learning of the incidents which precipitated this investigation and in apparent recognition that NAS-1016 and QCI 11.1 were inadequate as plant maintenance procedures, licensee management at NAPS developed and implemented VEPCO Site/Section Operating Procedure SOP 8.8.ON, "Coating Application," dated August 14, 1984 and NAPS Quality Assurance Department Instruction QADI 10.13, "Coatings Inspection," dated August 17, 1984. Several interviewees advised that quality control, operations, maintenance, engineering and construction interface at NAPS became more amenable with the implementation of these procedures.

## INTERVIEWEES

The individuals listed below provided pertinent information and testimony regarding the allegations and issues of the investigation.

ASKEW, Floyd Ray, contract painter, Exhibit 5

BOWLING, Martin Luther, VEPCO/NAPS Assistant Plant Manager,  
Exhibit 14

BURNS, William Drayton, Jr., VEPCO/NAPS Quality Control  
Inspector, Exhibit 18

CANFIELD, Norman Roderick, Coatings Technician and Salesman,  
Exhibit 6

FRALEY, Albert Demore, VEPCO/NAPS Project Manager,  
Exhibit 11

HARPER, Joseph Ralph, VEPCO/NAPS Maintenance Superintendent,  
Exhibit 12

HARRIS, William Juniorous, VEPCO/NAPS Quality Control Inspector,  
Exhibit 19

HUNLEY, George Henry, contract painter, Exhibit 6

JONES, John Michael, former VEPCO/NAPS Construction  
Superintendent, Exhibit 10

LANG, Marvin Nash, contract painter Supervisor,  
Exhibit 7

LONG, Henry L. Jr., Paint Manufacturer Company President,  
Exhibit 15

NOBLES, Wilson Carey, Construction Engineer, Exhibit 9

PARKER, Alfred Quinton, Engineering Supervisor,  
Exhibit 13

SMITH, James Allen, Quality Assurance Supervisor,  
Exhibit 17

In addition to these sources of information, other individuals were interviewed and provided repetitious and/or clarifying testimony concerning the purpose of the investigation. The identities and comments of these individuals are recorded in the "Details of Investigation" section of the report of investigation. An Organization Chart (Exhibit 2) identifies the location/management chain of each licensee and contract employee who was interviewed during the investigation.



## DETAILS OF INVESTIGATION

### Purpose of Investigation

The purpose of this investigation was to determine whether non-nuclear qualified and/or nuclear qualified coating materials (primer and/or finish) were deliberately and knowingly applied to the galvanized steel surface areas of the Air Cooling and Purging Systems (ventilation ring ductwork) in the Unit 1 and 2 containments at Virginia Electric and Power Company's (VEPCO) North Anna Power Station (NAPS), Mineral, VA. These systems were coated to mitigate severe boric acid corrosion at numerous locations. According to an allegor, the non-nuclear qualified coating materials were applied to the galvanized steel ventilation ring ductwork, with a NAPS supervisor knowing it was not Loss of Coolant Accident (LOCA) qualified. During the investigation of this allegation, evidence of willful and deliberate falsifications of Quality Assurance (QA) documentation associated with these ventilation ring ductwork coating projects was developed and pursued to its logical conclusion in accordance with the initial request from the originator of the investigation.

### Background

In an August 23, 1984 memorandum (Exhibit 1) from James P. O'REILLY, then Regional Administrator, Region II, U.S. Nuclear Regulatory Commission (NRC), Atlanta, GA, investigative assistance was requested regarding the alleged willful and deliberate use of non-nuclear qualified coating materials on the galvanized steel ventilation ring ductwork inside the containment structures of Units 1 and 2 at the NAPS facility. Accompanying the request letter were documents obtained or generated by the NRC, Region II Investigation/Allegation Coordination Section (I/ACS) which set forth the chronology of these alleged incidents. According to this documentation, the Unit 1 ventilation ring ductwork was coated in December 1982 and January 1983 and the Unit 2 system was coated in April and May 1983. The following information is provided in order that pertinent events prior to the initiation of the investigation request are properly focused and referenced:

(1) April 16, 1984 -

informed the NAPS Senior Resident Inspector that improper coating materials (epoxy finish coat over an enamel base coat) had previously been utilized on the ventilation ring ductwork inside the Units 1 and 2 containment buildings. indicated to the Senior Resident Inspector that NAPS construction officials had knowingly applied incorrect coating materials to these duplicate systems and that the paint had peeled on several occasions before bonding was achieved. Upon receiving the information the NAPS Senior Resident Inspector reviewed North Anna Specification 1016 (NAS-1016), the existing and applicable coatings procedure at the NAPS facility, and after

evaluation determined that  
valid."

concern "appeared to be

Investigator's Note: According to NAPS files and records, the Unit 1 ventilation ring ductwork was coated in December 1982 and January 1983 and the Unit 2 project was done during April 1983.

- (2) I/ACS documentation reflects that Region II, NRC staff officials were requested on May 8, 1984 to further review and evaluate concerns and to "formulate" appropriate action to address and resolve the issue. In a June 15, 1984 memorandum from the Region II, NRC Division of Reactor Safety to the I/ACS, it was recommended that the NAPS Senior Resident Inspector query VEPCO (NAPS) officials to determine the existence of an operational safety or health issue concerning allegation.
- (3) On July 17, 1984, was recontacted telephonically by a Region II, NRC I/ACS staff member, at which time he commented that knowledge of his concern (use of improper coating materials in the containment structures of Units 1 and 2) was widespread among "management" personnel at NAPS, including (Robert) BAULER and Wilson NOBLES. The I/ACS staff member informed that the NRC intended to inform VEPCO, without revealing his identity, of the alleged use of improper coating materials and further, to request them to analyze test coupons selected from portions of the ventilation ring ductwork.
- (4) On July 17, 1984, A VEPCO Corporate officials was informed that an allegation had been received by the NRC which indicated improper and non-nuclear qualified coating materials had been used on the Units 1 and 2 ventilation ring ductwork. Further, it was requested that VEPCO conduct sufficient inquiries to determine the identities of coating materials utilized and to ascertain the Loss of Coolant Accident (LOCA) significance and implications of these products. Further, on July 27, 1984, a VEPCO official telephonically informed Region II, NRC that their analysis disclosed that non-nuclear qualified base coat was probably utilized on the ventilation ring ductwork in Unit 1 but that Unit 2 "appears to meet" procedures specified in NAS-1016.
- (5) On August 3, 1984, at the request of VEPCO Corporate management, a meeting was held with NRC officials in Bethesda, MD to discuss technical and health and safety implications of using non-nuclear qualified coating materials inside containment environment and of using paints not approved for galvanized steel surfaces. An August 13, 1984 NRC memorandum, with attachments, summarizing contacts with the licensee pursuant to their options regarding corrective actions for health and safety implications is Exhibit 3.

- (6) On August 21, 1984, the NAPS Senior Resident Inspector advised the I/ACS staff that William BURNS, a site Quality Control Inspector who inspected the initial ventilation ring ductwork coating project, had stated NAPS "engineering people" were told by him (BURNS) before the Unit 1 coating project was initiated that paint should not be applied to a galvanized steel surface. According to the NAPS Senior Resident Inspector, BURNS was informed by "station engineering" that the ventilation ring ductwork was not a safety related system; that he (BURNS) should not be concerned about this aspect of the project and that he should "just apply the paint."

The investigation initiation letter, referenced above, asks for interviews initially with the confidential allegor, the two NAPS supervisors and the Quality Control inspector but requests expansion of investigative activities if information is developed which would warrant such actions.

#### Interviews of NRC Officials

During the investigation, the following Region II, NRC officials were interviewed regarding their knowledge of these incidents as a result of their participation in the technical resolution of this matter:

Stephen E. ELROD, Section Chief  
James G. LUEHMAN, Resident Inspector

ELROD, on September 7, 1984, reiterated the contents of the NRC memorandum dated August 13, 1984 (Exhibit 3) and the investigation request memorandum (Exhibit 1) and provided historical data regarding the ventilation ring ductwork coating projects at NAPS Units 1 and 2. He advised that, in his opinion, the obvious failure of the licensee to properly evaluate the maintenance work requests for safety significance and implications regarding this system resulted in the use of non-nuclear qualified coating material and the coating of a galvanized steel surface. ELROD further opined that NAPS Construction Department supervision responsible for coating matters was aware that their coating procedures were being violated when this work was accomplished. LUEHMAN, specifically on September 10, 1984 and December 4, 1984, and at various intervals during the investigation, provided pertinent comments and information he had obtained during the routine performance of resident inspections at the NAPS facility. He reiterated the allegations and concerns of the allegor and explained the technical and operational evaluations performed by both the licensee and the NRC regarding the Units 1 and 2 ventilation ring ductwork coating projects. Additionally, LUEHMAN advised of conversations with NAPS Quality Control (QC) personnel, including Site Manager Andrew HOGG, Supervisor Jim SMITH and Inspector BURNS, wherein they acknowledged that objections raised by QC regarding coating of a galvanized steel surface was over-ruled by "someone in engineering," not further identified. LUEHMAN also advised that during an August 20, 1984 meeting with these NAPS Quality Control personnel, BURNS made claims regarding preparation of the coated surfaces which

were later determined to be inaccurate. He said BURNS adamantly asserted that all coated surfaces of the ventilation ring ductwork were prepared to the exact specifications stated in the PCSPR's. He said BURNS told him that although sandblasting had not been utilized to achieve an SP-10 surface as indicated on the PCSPR's, a comparator standard was used to insure the required surface finish had been achieved. LUEHMAN advised that upon asking to see the comparator standard used, HOGG told him that none was available on site but that "copies were on order."

Investigator's Note: During the investigation, various craft and NAPS Construction personnel were asked to provide a copy of a comparator standard for surface preparations. All of the individuals queried regarding a comparator standard advised that they were unaware of the existence of this item at the NAPS site, either during or prior to the ventilation ring ductwork coating projects.

Interview of Allegor

### Interviews of Contract Painters

ASKEW, in Exhibit 5, related in essence the following information:

- As an FC contract painter at the NAPS site from June 1982 to March 1983, and from June to December 1983, he mixed and batched and forwarded to the Unit 1 containment building Debevoise Dereka No. 505 Red primer (base coat), not Mobil Chromax 13-R-50, and Dupont white Epoxy (finish coat) at the direction of BAULER for use during the Unit 1 ventilation ring ductwork coating project.
- He was told by BAULER to transport the paint (Dereka No. 505) to the Unit 1 containment building in "unmarked" containers, a violation of the NAS-1016 procedures.
- The NAPS QC inspectors were not present at any time when the paint used on the Unit 1 ventilation ring ductwork were selected, mixed and batched.

Investigator's Note: Both the North Anna Power Station procedure NAS-1016 and VEPCO Multiple Power Projects QCI 11.1 require QC participation in these processes.

Joseph Edward BROWN, Jr., an FC contract painter at the NAPS site since June 1982, related that Robert BAULER, the NAPS Construction Supervisor and "coatings expert," completely managed, directed and supervised the Unit 1 ventilation ring ductwork coating project. BROWN advised he personally informed BAULER that the enamel (base coating) and epoxy (finish coating) materials he (BAULER) had selected were not nuclear qualified and/or should not be utilized together to coat a galvanized steel surface. He said BAULER forcefully told him to either do as he had instructed or to "hit the road," a comment he (BROWN) interpreted as a termination threat. BROWN concluded that, although knowing he was using non-nuclear qualified paint to coat a galvanized steel surface, he followed the directions of BAULER while involved in the Unit 1 ventilation ring ductwork coating project.

HUNLEY, in Exhibit 6, related in essence the following information:

- As an FC contract painter at the NAPS facility from June 1981 to May 1983, he participated in the ventilation ring ductwork coating project in December 1982, under the total supervision of BAULER.
- He voiced concern to BAULER that the enamel base and the epoxy finish coats were incompatible and non-nuclear qualified for a containment environment.
- The galvanized steel surfaces of the ventilation ring ductwork were inadequately and incorrectly prepared under BAULER's direction, even though the QC documentation in the form of the PCSPR's he prepared reflects proper surface preparations.



- The PCSPR's for the Unit 1 ventilation ring ductwork contain false, erroneous and incorrect paint identifier and coating process related information entered by BAULER and concurred with by NAPS QC Inspectors Bill BURNS and Bill HARRIS.
- The NAPS QC inspectors were not present to inspect all of the Unit 1 ventilation ring ductwork coating project, even though they signed PCSPR's indicating they had independently performed their responsibilities.

Charles Cecil LAMB, an FC contract painter at the NAPS site from October 1980 to March 1983, advised he prime (base) coated the entire Unit 1 ventilation ring ductwork using Debevoise Dereka No. 505. LAMB advised that in his opinion, BAULER failed to follow the NAS-1016 coating procedure by allowing improper surface preparations before paint application and by using non-nuclear qualified coating materials. He said BAULER, through threatening and intimidating management practices, required all coating work to be performed in the manner he directed which was not always according to NAS-1016 requirements.

LANG, in Exhibit 7, related in essence the following information:

- As an FC contract painter and foreman at the NAPS site since July 1981 he participated in both the Units 1 and 2 ventilation ring ductwork coating projects.
- The NAPS Maintenance Department concurred with the Construction Department recommendation to coat the Units 1 and 2 ventilation ring ductwork to mitigate boric acid corrosion damage. BAULER directed all painting activities on the Unit 1 ventilation ring ductwork.
- The PCSPR forms associated with these coating projects in Units 1 and 2 contain incorrect entries regarding the manner of surface preparation inasmuch as they (surfaces) were not prepared as indicated by BAULER, who completed these forms.
- The use of non-nuclear qualified coating materials over a galvanized surface during the Unit 1 ventilation ring ductwork project resulted from failure by NAPS officials to conduct an engineering evaluation and the failure by the QC Department to perform their responsibilities.
- He contacted the Keeler and Long field representative regarding the base and finish coating materials utilized on the Unit 2 ventilation ring ductwork and was told that these products were nuclear qualified and approved for use on a galvanized steel surface.

#### Interviews of Construction Department Officials

NAPS Construction Department officials who were affiliated with the Units 1 and 2 ventilation ring ductwork coating projects were

interviewed regarding the purpose of the investigation.

NOBLES, in Exhibit 9, related in essence the following pertinent information:

- NAPS employee BAULER, as Construction Department Coating Supervisor, managed all coating/painting activities at the facility, including the Units 1 and 2 ventilation ring ductwork projects in 1982 and 1983. He (NOBLES) was minimally involved only in the Unit 1 coating project.
- Although he (NOBLES) supervised BAULER and they both were aware that the ventilation ring ductwork system was constructed of galvanized steel, neither recognized the safety implications or the NAS-1016 procedure requirements pertaining to the coating of galvanized surfaces.
- BAULER was an "opinionated" supervisor who failed to utilize sound and impartial management principles; a style which resulted in animosities between him, BAULER and other NAPS management and craft personnel.
- Although BAULER was responsible for ensuring that PCSPR's were prepared, the QC Inspector is required to sign and date these forms certifying that an independent verification of coating activities has been performed.
- He (NOBLES) said he was unaware that PCSPR's associated with the Unit 1 ventilation ring ductwork coating project contained false information and he did not recognize the safety implications of coating a galvanized surface inside containment. He denied he was aware that coating materials selected for these projects were non-nuclear qualified.

Investigator's Note: During post interview remarks by NOBLES, he alluded to personality, philosophical and professional conflicts with BAULER, resulting in "vicious" and false accusations by BAULER. NOBLES appeared to provide responses to questions regarding interpersonal and professional relationships with BAULER with apparent sincerity, candidness and forthrightness.

JONES, in Exhibit 10, related in essence the following pertinent information:

- He was serving as the NAPS Construction Department Superintendent when the Units 1 and 2 ventilation ring ductwork projects were initiated. BAULER was delegated the responsibility to manage, coordinate and supervise these projects.
- He did not know why these projects were regarded as non-safety related or why a safety analysis was not performed.
- JONES denied he was aware that the NAS-1016 coating procedure was violated when these projects were accomplished and that non-nuclear qualified coating materials were utilized. He further denied that he allowed or directed violations of procedures and practices which impacted upon health and/or safety considerations. He claimed no knowledge of false or discrepant entries on QC documentation associated with either of these projects.

FRALEY, in Exhibit 11, related in essence the following pertinent information:

- The NAPS work requests which initiated the Units 1 and 2 ventilation ring ductwork coating projects are Maintenance Reports (MR) rather than Design Change Packages (DCP). Since an MR requires no safety or engineering analysis or evaluation, this explains why the safety implications of these projects were inadvertently overlooked.
- The actual coating processes were directed and managed by BAULER under the supervision of JONES and NOBLES. These individuals had daily access to and were supposedly knowledgeable of the NAS-1016 coating procedure.
- After learning from the NRC in July 1984 of potential procedural and safety violations associated with both ventilation ring ductwork coating projects he noted inaccurate and discrepant data in the PCSPR's, including the manner of surface preparations and type of primer coating used in Unit 1.
- He identified BAULER as the NAPS supervisor responsible for preparing/approving inaccurate QC documentation. He also

intimated that JONES may have been aware that the NAS-1016 procedure was being violated at the time the projects were in progress, only because he supervised BAULER.

- He stated he was never consulted by BAULER regarding coating materials used during these projects and he did not direct BAULER to consult with any paint manufacturer regarding these materials.
- He denied personal knowledge that construction, engineering or quality control procedures were violated during these projects. He claimed he is unaware that any NAPS management officials, except BAULER and perhaps JONES, were aware that procedures were violated.

#### Interviews of Maintenance Department Officials

HARPER, in Exhibit 12, related in essence the following pertinent information:

- As the Maintenance Department Superintendent, he authorized, approved and obligated funding for the Units 1 and 2 ventilation ring ductwork coating projects.
- He consulted with Construction Department Coating Supervisor BAULER, who recommended coating the galvanized surfaces to mitigate the effects of boric acid corrosion. He concurred with this recommendation, assuming BAULER was knowledgeable of applicable coating procedures.
- He stated that a safety or engineering evaluation was not performed regarding these projects because, to his knowledge, coating/painting had never before received such an analysis at the NAPS facility.
- He advised that safety implications associated with these projects were inadvertently ignored. He claimed no deliberate disregard of procedures governing these activities.

The following NAPS Maintenance Department employees were interviewed regarding the purpose of this investigation:

Doswell Stubbs PIERCE, Maintenance Coordinator  
Ronald Eugene STILES, former Maintenance Contractor Coordinator  
James Richard STRATTON, Maintenance Supervisor

PIERCE, interviewed on September 13, 1984, related he was responsible for initiating funding and authorization documentation regarding the ventilation ring ductwork coating projects in Units 1 and 2. He said he was not responsible for determining whether work activities are safety related and that he is not qualified to make this determination. PIERCE advised he was unable to provide any insight into the manner in which these projects were performed or the



decisions made by personnel directing, managing or supervising these activities. He denied any knowledge of improprieties associated with either of these coating projects.

STILES, interviewed on September 13, 1984, advised he reviewed documentation associated with the ventilation ring ductwork coating projects in Units 1 and 2 to make certain all signatures/dates were affixed. He said the actual work activities, including any safety evaluations, procedure requirements and the accomplishment of the coating process are the responsibilities of officials outside of his department. STILES was unable to provide an explanation regarding the failure by appropriate NAPS official(s) to perform a safety analysis. He said that Construction Department Coating Supervisor Robert BAULER told him to annotate the "Work Performed" section of the Unit 1 Maintenance Report with the comment that "all painting was done IAW (in accordance with) station specifications." STILES denied knowledge of deliberate violations of procedures or falsification of QC documentation associated with these coating projects.

STRATTON, interviewed on October 19, 1984, related in essence the same comments provided by HARPER, PIERCE and/or STILES, above. He also claimed no knowledge of deliberate procedural violations, willful utilization of improper coating materials or falsification of QC documentation.

#### Interview of Operations Department Officials

The following NAPS Operations Department officials were interviewed on December 4 and 5, 1984:

Robert Carroll STARR, Shift Supervisor  
Curtis George MEYER, former Shift Supervisor

Both of these individuals advised separately that coating the ventilation ring ductwork in Units 1 and 2 was recommended and approved by the NAPS Maintenance and Construction Departments to mitigate boric acid corrosion. Both stated that at the time the ventilation ring ductwork was approved for painting, they did not consider the safety implications of coating inside of containment. STARR advised that, at the time, he inadvertently failed to consider the impact of peeling paint in the event of a LOCA. He said that since painting, in his interpretation, did not structurally alter the ventilation ring ductwork, he did not consider it necessary for an engineering or safety analysis to be performed. MEYER stated also that he inadvertently failed to consider the safety implications of coating in containment and for this reason a safety analysis by the engineering department was not requested. Both individuals denied any deliberate attempt to violate procedures or to consciously preclude the engineering department from performing an evaluation/analysis of these projects.

### Interviews of Technical Services Personnel

The following NAPS Technical Services (Engineering) personnel were interviewed on October 11, 1984 regarding the purpose of this investigation:

Peter Thor KNUTSEN, Supervisor of Nuclear Engineering  
Michael Glenn PINION, Engineer

Both individuals advised separately that they did not recall requests from NAPS Construction, Maintenance or the Operations Departments for a safety analysis regarding the ventilation ring ductwork coating projects in Units 1 and 2. KNUTSEN advised that had the Engineering Department given advice or rendered assistance regarding these projects it would have been documented with an Engineering Work Request form. He said no such forms or documentation exists in the NAPS Engineering Department regarding these projects. He stated that any engineering guidance provided regarding these projects would have been within the parameters of NAS-1016, the coating procedure generally available to all NAPS departments. Neither individual was able to explain the reason a safety or engineering analysis was not requested, although they opined the "low priority" and relatively insignificant status of coating projects likely contributed to this failure.

Investigator's Note: William BURNS, QC Inspector at the NAPS facility stated in testimony recorded in a subsequent section of the report that he personally notified the Engineering Department upon learning no safety analysis had been performed prior to coating the ventilation ring ductwork in Unit 1. Both KNUTSEN and PINION, at the request of the investigator, researched engineering records and files and contacted other engineers regarding BURNS' assertions. This effort failed to locate any evidence that the Engineering Department was informed of this matter by BURNS or any other QC personnel.

### Interviews of NAPS Plant Officials

PARKER, in Exhibit 13, related in essence the following pertinent information:

- During the summer of 1982, he attended a meeting with NAPS Construction Department personnel FRALEY, JONES and BAULER and then Station Manager Robert CARTWRIGHT, which resulted in the decision to paint the Unit 1 ventilation ring ductwork to mitigate boric acid corrosion.
- He approved the Unit 1 "Request For Work" form and forwarded it to the NAPS Construction Department for implementation.

- Although not involved in the actual work process, he did not recall any comments by any NAPS personnel pertaining to the safety implications of coating the ventilation ring ductwork in either Units 1 or 2.
- These projects should have been performed in accordance with NAS-1016 and QCI 11.1 coating procedures for Construction and Quality Control respectively.
- He attributed subsequent Units 1 and 2 ventilation ring ductwork coating defects to BAULER's failure to follow existing procedures and because of ineffective communications between all of the NAPS departments involved in these projects.
- He claimed no knowledge of willful, deliberate procedural violations or QC records falsifications regarding these projects.

BOWLING, in Exhibit 14, related in essence the following pertinent information:

- Although he was not employed at the NAPS facility when the Units 1 and 2 ventilation ring ductwork were coated, since July 1984 he has attempted to determine the circumstances which caused non-nuclear qualified materials to be utilized in coating a galvanized steel structure inside of containment.
- To his knowledge no NAPS plant officials were aware that non-nuclear qualified paint was used on the ventilation ring ductwork or that galvanized surfaces inside containment were coated in violation of NAS-1016.
- He reviewed PCSPR's associated with the ventilation ring ductwork coating projects in Units 1 and 2 and acknowledged false and discrepant information therein, including the method of surface preparation and type of primer coating utilized on Unit 1 system.
- Responsibility for preparing PCSPR's and ensuring the accuracy of the data therein was jointly shared by Construction Supervisor BAULER and the assigned QC inspector.

Edward Wayne HARRELL, Station Manager, interviewed on October 10, 1984, related he was an Assistant Station Manager when the Units 1 and 2 ventilation ring ductwork was coated. He reiterated the testimonies of NAPS Construction Maintenance and Operations Department personnel concerning the decisions to paint these systems. HARRELL acknowledged limited participation in general discussion sessions with Construction and Maintenance personnel regarding these projects but stated detailed decisions were made at the department level. He claimed no knowledge of procedure violations, utilization of improper coating materials or

any other improprieties associated with these projects. He said he did not learn of these problems until the NRC notified VEPCO's Corporate Office (CARTWRIGHT) of these deficiencies about July 1984. HARRELL advised that VEPCO ordered an immediate investigation of the allegations reported by the NRC and determined an option acceptable to the NRC for alleviating these deficiencies. HARRELL further acknowledged discrepant surface preparation and paint identity information in the PCSPR's associated with these projects. He claimed no personal knowledge of deliberate deviations from established procedures or of intentional falsification of QC documentation.

William Robert CARTWRIGHT, former Station Manager, was interviewed on December 7, 1984 and reiterated the comments of HARRELL, above. He denied knowledge of deliberate violations of procedures or any records improprieties associated with the coating projects in Units 1 and 2.

#### Interviews of Paint Manufacturing Representatives

LONG, in Exhibit 15, related in essence the following pertinent information:

- Neither he nor any member of his staff recall any telephone contacts by anyone from NAPS in 1982 or 1983 regarding the suitability of using Keeler and Long products or those of any competitors on galvanized steel ventilation ring ductwork inside containments.
- In July or August 1984, Keeler and Long received three telephone calls from VEPCO/NAPS regarding the suitability of using Keeler and Long 6548/7107 primer and E-1 Series top coat on a galvanized surface in a containment environment. The callers were informed that these materials were not suitable for the use described.

CANFIELD, in Exhibit 16, related the following pertinent information:

- He is acquainted with Robert BAULER, former Construction Supervisor at NAPS. At no time did BAULER or any NAPS or contractor employee at the facility solicit information or advice from him regarding the use of any coating materials for the ventilation ring ductwork in the containments of Units 1 and 2.

#### Investigator's Note:

All Keeler and Long personnel contacted during the investigation recall no contacts of any sort with BAULER regarding 1982 and 1983 ventilation ring ductwork coating activities in Units 1 or 2. LANG (Exhibit 7) claimed he telephonically



contacted CANFIELD regarding compatibility of paint for the Unit 2 project, however, CANFIELD did not recall this or any other communications with NAPS personnel regarding the ventilation ring ductwork coating projects.

#### Interviews of NAPS Quality Assurance Personnel

Andrew Logan HOGG, Jr., Site QA Manager, interviewed on October 10 and December 6, 1984, related he held his current position during the periods when the Units 1 and 2 ventilation ring ductwork coating projects were being performed. HOGG claimed that his involvement in these projects was minimal. He identified QC Inspectors Bill BURNS and Bill HARRIS as the individuals assigned to conduct required inspections of the ventilation ring ductwork coating activities. HOGG advised that he never questioned these inspectors regarding their inspection activities on the ventilation ring ductwork and he never had reason to doubt their integrity concerning these matters. He claimed no knowledge of any QC records improprieties by HARRIS or BURNS and said they never discussed their coating inspection duties or the contents of the PCSPR's they signed and dated regarding the ventilation ring ductwork coating activities in Units 1 and 2.

Investigator's Note: HOGG appeared defensive of BURNS and HARRIS when answering questions regarding possible records improprieties by these individuals. He strongly asserted that they were above reproach in all respects and that they always performed in a professional and competent manner. The suggestion that they could have performed these coating inspections in other than a professional manner caused HOGG to become irritable and antagonistic.

SMITH, in Exhibit 17, related the following pertinent information:

- He supervised both BURNS and HARRIS when they conducted inspections of the ventilation ring ductwork in Units 1 and 2. He acknowledged that these inspectors did not participate in the selection, mixing, batching and labelling and in some primer and top coat application activities in the Unit 1 project because the Construction Department failed to notify the QA Department of this project in a timely manner.
- He does not know whether BURNS and HARRIS performed the inspections functions as indicated on the PCSPR's for Units 1 and 2 since he performed no verification activities.
- In August 1984, when the licensee was directed by the NRC to determine the circumstances of the coating deficiencies in Units 1 and 2 he questioned BURNS regarding his signatures on the PCSPR's. He said BURNS told him his (BURNS) signature represented independent verification according to applicable QC procedures.



- Both BURNS and HARRIS told him subsequently they had inspected the ventilation ring ductwork coating projects according to existing procedures and that their signatures on PCSPR's certified their independent verification.
- Subsequent evidence indicates that both BURNS and HARRIS may have failed to properly perform their inspection duties, although he (SMITH) never confronted them regarding apparent records discrepancies.

BURNS, in Exhibit 18, related in essence the following pertinent information:

- Upon being assigned to inspect the Unit 1 ventilation ring ductwork coating activities in December 1982, he informed a NAPS engineer, not further identified, that no engineering evaluation had been performed regarding this project.
- He informed the same engineer that required surface preparation for the ventilation ring ductwork had not been properly achieved and that paint was being applied to a galvanized steel surface.
- He signed and dated PCSPR's without performing certain of the inspection functions and responsibilities required by NAPS Construction and Quality Control procedures. He acknowledged his actions in this regard as a deliberate and conscious falsification of QC documentation.
- He collaborated with and was manipulated and coerced by BAULER to falsely certify that QC functions and responsibilities had been properly accomplished during the Units 1 and 2 ventilation ring ductwork projects.
- In August 1984, he discussed the false and inaccurate entries on the PCSPR's with two supervisors and both directed him to make a full disclosure to the NRC regarding his actions.

Investigator's Note: During the interviews of HOGG and SMITH both advised that they had not discussed records improprieties or ventilation ring ductwork inspection activities with BURNS or HARRIS. Based upon BURNS' testimony, both HOGG and SMITH were aware of false entries in the ventilation ring ductwork PCSPR's in August 1984. Both HOGG and SMITH categorically denied BURNS' assertions.

- His failure to properly perform inspection duties and enforce procedures resulted in the utilization of non-nuclear qualified coating materials and applications of paint over a galvanized steel surface.

HARRIS, in Exhibit 19, related in essence the following pertinent information:

- As one of two QC inspectors assigned to the ventilation ring ductwork coating activities in Units 1 and 2, he knowingly signed and dated PCSPR's which contained false, erroneous and inaccurate entries and which are not reflective of his inspection efforts regarding these projects.
- He permitted NAPS coating supervisor Robert BAULER to initiate PCSPR's containing inaccurate data.
- He accepted BAULER's data entries on the PCSPR's without performing an independent inspection as required by NAPS procedures.
- He allowed BAULER to manipulate him in an unprofessional manner and he failed to perform inspection duties associated with these projects in a competent professional manner.

## REVIEW OF LICENSEE RECORDS

Pertinent licensee files and records were reviewed during the course of this investigation. Exhibits 20 through 32 are copies of documents from these files and records, provided by Steven B. EISENHART, Licensing Coordinator, at the NAPS facility.

Exhibits 20 and 21 are two dimensional drawings of half of the NAPS Units 1 and 2 Containment Air Recirculation System and Purge Exhaust, reflecting both the inner and outer ductwork of the system.

Exhibits 22 and 23 are copies of the completed "Request For Work" form, Number 1499999160, dated December 13, 1982 and Maintenance Request form (MR) Number N1-82-12230510 (Unit 1) and the "Request For Work" form Number 1499999240, dated March 22, 1983 and MR form Number N2-82-06030033 (Unit 2).

Investigator's Note: R.E. STILES, NAPS Maintenance Coordinator during the period December 1981 to March 1983, related that these documents were prepared, for planning purposes, "well in advance" of the actual accomplishment of the ventilation ring ductwork coating projects. He advised that this fact accounts for the "6/14/82" date on the Unit 1 "Request For Work" form and for the "06/02/84" (typographical error) date on the Unit 2 MR. A.Q. PARKER related he inadvertently indicated "No" QA Approval on the Unit 1 Request For Work and R.C. STARR advised that he indicated "No" in the Safety Related section of each MR since he inadvertently failed to consider the health and safety implications of painting the galvanized steel ventilation ring ductwork.

Exhibit 24 is a handwritten memorandum from Stephen B. EISENHART, NAPS Licensing Coordinator to Investigator Robert H. Burch, which documents the results of his search for "an engineering decision or determination" regarding the Units 1 and 2 ventilation ring ductwork coating projects. According to the memorandum, no documented "engineering decisions" were located regarding these projects.

Exhibit 25 is a copy of VEPCO's License Event Report (LER) No. LER-84-006 dated April 30, 1984. This licensee document describes "the event" (application of non-nuclear qualified coating materials on galvanized steel ventilation ring ductwork inside containment), addresses the cause and sets forth the licensee actions to be taken to correct these deficiencies and prevent their recurrence.

Exhibit 26 is a copy of an Impell Corporation report entitled "Administrative Controls Assessment Concerning Coating Controls at North Anna and Surry Power Stations." This document is the result of Impell's analysis and review of coating/painting controls and procedures at both the North Anna and Surry Nuclear Generating Plants after VEPCO officials were informed by the NRC that non-nuclear qualified coating materials had been utilized on ventilation ring ductwork. The comments reflected in the "Executive Summary,"

"Scenario" and "Observations" sections regarding QC involvement corroborate certain of the investigative disclosures set forth in this report of investigation.

Exhibit 27 is a copy of a NAPS Construction Department memorandum dated October 15, 1984 entitled "History of Ring Duct Coatings Unit I and II North Anna Power Station." This memorandum sets forth discrepancies which have been noted in PCSPR's associated with the Units 1 and 2 ventilation ring ductwork coating projects, including surface preparation activities and identification of Unit 1 primer coating.

Exhibit 28 is a copy of NAPS Purchasing Department memorandum dated October 15, 1984. This document states that no Mobil 13-R-50 (Mobil Chemical Company product) coating material was purchased by VEPCO for the NAPS facility.

Exhibit 29 is a copy of a paint label provided by former FC painter Ray ASKEW on October 10, 1984. ASKEW, in providing the paint label, advised unequivocally that Dereka No. 505 Red Primer and not Mobil 13-R-50, was used as the primer coating on the Unit 1 ventilation ring ductwork.

Exhibit 30 is the primer coating PCSPR's (4 documents) for the NAPS Unit 1 ventilation ring ductwork.

Exhibit 31 is the finish coating PCSPR's (5 documents) for the NAPS Unit 1 ventilation ring ductwork.

Exhibit 32 is the primer and finish coating PCSPR's (4 documents) for the NAPS Unit 2 ventilation ring ductwork.

Investigator's Note: The inaccuracies and discrepancies contained in Exhibits (30) through (32), above, are set forth in the sworn statements of BURNS and HARRIS, which have been attached to the Report of Investigations as Exhibits (18) and (19), respectively.

## REVIEW OF BAULER'S RECORDS

The files and records pertaining to Robert N. BAULER, applicable to his employment tenure at the NAPS facility, were made available to the NRC Office of Investigations by Corporate licensee official R. J. HARDWICK, Jr. Information and documentation contained in BAULER's files and records, which is deemed pertinent to this investigation, is set forth in this section of the investigation report.

VEPCO Personnel Department records reflect BAULER was employed in the NAPS Construction Department from March 1980 to June 1981 and again from September 1981 to March 1984.

BAULER was  
separated from VEPCO/NAPS on March 2, 1984. These personnel records





## LIAISON WITH THE REQUESTOR

During the course of the investigation the Region II Office of the Regional Administrator and/or members of his staff, including the NAPS Resident Inspector, were frequently apprised regarding the progress and disclosures of the investigation. At the conclusion of the investigation, the Region II staff personnel were apprised of all investigative disclosures and no additional investigation was requested.

## STATUS OF INVESTIGATION

Inasmuch as all logical and significant investigative activities have been completed, the status of this investigation is CLOSED.

## WILLFULNESS/INTENT

This investigation was initiated to determine and/or resolve:

- (1) Whether non-nuclear qualified paint was deliberately and knowingly used to coat galvanized steel surfaces of the ventilation ring ductwork inside the containments of Units 1 and/or 2, in violation of applicable regulations and procedures.
- (2) When licensee management became aware of the apparent use of non-nuclear qualified paint; what level of licensee management was aware of this deficiency/discrepancy and to what extent did licensee officials discuss this matter.
- (3) Other discrepancies and deficiencies resulting from or associated with the apparent use of improper coating materials on the ventilation ring ductwork.

With regard to Item 1 above, it was determined through interviews that:

- Robert N. BAULER, then NAPS Construction Supervisor (Coatings) (first line supervisor) knowingly directed painters to apply a non-nuclear qualified base coating over the galvanized steel surfaces of the ventilation ring ductwork inside Unit 1 containment. This determination is based upon the testimonies of HUNLEY (Exhibit 6) BROWN and LAMB. These individuals further surmised that, because the Unit 1 and Unit 2 ventilation ring ductwork is identical, BAULER also knowingly directed the application of nuclear qualified coating materials over the galvanized steel ventilation ring ductwork in Unit 2.

With regarding to Item 2 above, it was determined through interviews and licensee documentation that:

- Licensee management, except BAULER, was apparently unaware that non-nuclear qualified paint had been used to prime coat the Unit 1 galvanized steel ventilation ring ductwork until the NRC notified VEPCO officials in July 1984. Further, inquiries disclosed that licensee management was apparently unaware of the safety implications resulting from the use of nuclear qualified coating materials over the galvanized steel ductwork in Unit 2 until after the NRC advised VEPCO officials of the coating discrepancies in Unit 1.
- Based upon interviews of contract painters and NAPS Construction, Maintenance, Engineering, Operations and Quality Assurance officials no evidence of management knowledge of these discrepancies beyond the level of BAULER was developed. Although indicated NAPS Construction Department officials FRALEY, JONES and NOBLES and

Maintenance Department Superintendent HARPER (see Exhibit 2 for level of management) were aware that a galvanized steel system was being coated in the Units 1 and 2 containment, all denied deliberate or willful violations of existing coating regulations and safety procedures. These and all other NAPS management officials claimed that the health and safety significance of coating the galvanized structures was inadvertently overlooked at the time the decision was made to paint the ventilation ring ductwork. A significant number of licensee officials in the NAPS Construction, Maintenance, Engineering, Operations and Quality Assurance Departments alluded to "communications deficiencies" between departments as one cause of these coating discrepancies, (see Exhibits 9, 10, 11, 12, 13 and 14).

With regard to Item 3 above, it was determined through interviews that:

- QC Inspectors assigned to inspect the ventilation ring ductwork coating projects in Units 1 and 2 failed to perform their inspection duties as required by procedures, (see Exhibits 4, 5, 6 and 8). Further, during the interviews of the two QC inspectors assigned to the ventilation ring ductwork, both acknowledged that they collaborated with NAPS Construction Supervisor BAULER to certify false and inaccurate entries on the PCSPR's associated with these projects (see Exhibits 18 and 19).



## EXCULPATORY INFORMATION

Based upon the testimonies of a significant number of interviewees, it was disclosed that several factors contributed to the coating deficiencies associated with the Units 1 and 2 ventilation ring ductwork projects. Those factors are enumerated as follows:

- (1) The apparent failure of NAPS facility management personnel (Maintenance, Construction, Engineering, Operations and Quality Assurance Departments) to discuss and/or communicate ramifications and safety implications of coating these systems at the times the decisions were made to perform this activity.
- (2) Historically, the low priority and relative unimportance of the coatings process at the NAPS facility by management officials.
- (3) The apparent inadvertent failure of NAPS Operations Department management officials to recognize that coating/painting a safety related system is, in effect, a design change requiring an engineering evaluation.
- (4) The apparent lack of quality control inspectors with experience in the coatings discipline when the ventilation ring ductwork projects were initiated.
- (5) The inaccessibility to and/or unfamiliarity with NAPS coating procedure NAS-1016 by craft personnel involved in coating activities.
- (6) The apparent inadequacy of the coating and/or quality control procedures in effect at the time the ductwork systems were coated.

Investigator's Note: Evidence of Item 6, above is the fact that on August 14, 1984 and August 17, 1984 NAPS implemented VEPCO Site/Section Operating Procedure SOP No. 8.8.ON and Quality Assurance Department Instructions QAD 10.13, respectively. These procedures were developed and implemented to provide guidance regarding "Coatings Application" and "Coatings Inspection" at the NAPS facility.

Exhibits 4, 6, 7, 9, 10, 11, 12, 13, 17, 18 and 19 discuss and address one or more of the above listed factors.

## CONCLUSIONS

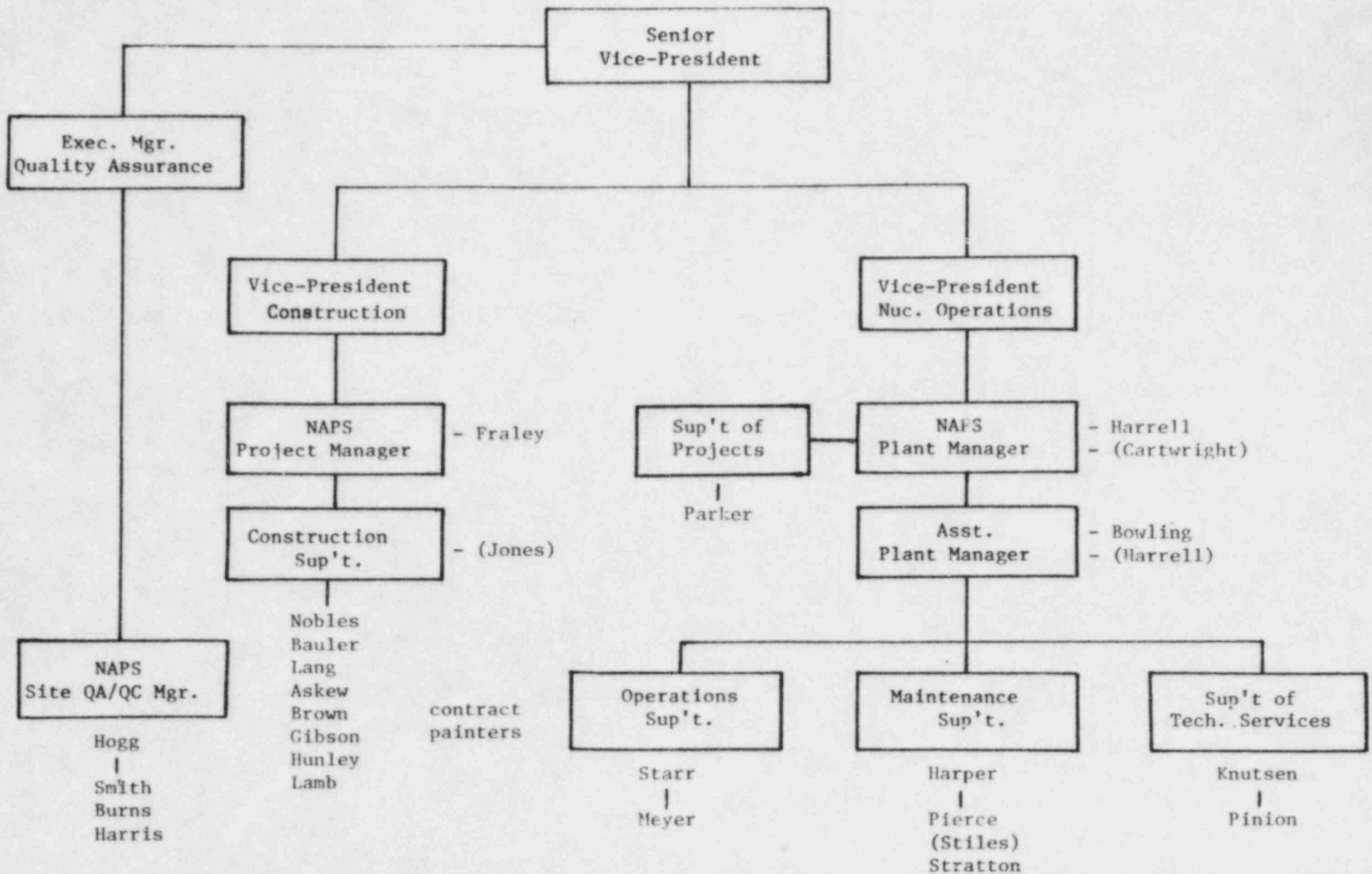
The evidence obtained during the investigation, in the form of documentation and interviewee testimony set forth in signed statements and Results of Interviews disclosed the following:

- BAULER, then the NAPS Construction (Coatings) Supervisor (first level), directed craft painters to apply a non-nuclear qualified primer coating material on the galvanized steel ventilation ring ductwork of Unit 1. He further directed the application of an incompatible top coating on this same structure and he directed applications of nuclear qualified primer and top coating on the Unit 2 galvanized steel ventilation ring ductwork.
- QC Inspectors BURNS and HARRIS, in collaboration with BAULER, knowingly placed false and erroneous information on the PCSPR's after failing to perform their inspection duties and responsibilities. All three individuals signed and dated the PCSPR's certifying that data contained therein was correct and factual and that independent QC verification had been performed in accordance with applicable procedures.
- No NAPS management official above the level of BAULER apparently recognized the safety and health implications of coating the galvanized steel ventilation ring ductwork inside of containments until the licensee was notified by the NRC in July 1984.

Exhibits 4, 5, 6, 8, 18, 19, 29, 30, 31 and 32 discuss and support the conclusions as set forth in this section of the Report of Investigation.

## EXHIBITS

- (1) Region II, NRC investigation request memorandum, dated 8/23/84
- (2) VEPCO/NAPS Organization Chart
- (3) NRC memorandum from L. ENGLE to J. MILLER, dated 8/13/84
- (4)
- (5) Results of Interview of F.R. ASKEW, dated 10/10/84
- (6) Signed Statement of G.H. HUNLEY, dated 9/26/84
- (7) Results of Interview of M.N. LANG, dated 9/12/84
- (8)
- (9) Results of Interview of W.C. NOBLES, dated 10/18/84
- (10) Results of Interview of J.M. JONES, dated 12/8/84
- (11) Results of Interview of A.D. FRALEY, dated 10/10/84
- (12) Results of Interview of J.R. HARPER, dated 12/6/84
- (13) Results of Interview of A.Q. PARKER, dated 9/13/84
- (14) Results of Interview of M.L. BOWLING, Jr., dated 9/12/84 and 10/10/84
- (15) Signed Statement of H.L. LONG, Jr., dated 10/3/84
- (16) Results of Interview of N.R. CANFIELD, dated 12/10/84
- (17) Results of Interview of J.A. SMITH, dated 10/9/84
- (18) Signed Statement of W.D. BURNS, Jr., dated 12/4/84
- (19) Signed Statement of W.J. HARRIS, dated 12/5/84
- (20) Two dimension drawing of one half of the Units 1 and 2 ventilation ring ductwork system
- (21) Two dimension drawing of one half of the Units 1 and 2 ventilation ring ductwork system
- (22) Request For Work Form No. 1499999160 and associated Maintenance Report No. N1-82012230510
- (23) Request For Work Form No. 1499999240 and associated Maintenance Report No. N2-82-06030033
- (24) Memorandum from EISENHART to BURCH regarding Document Search, dated 10/11/84
- (25) VEPCO letter to the NRC, Washington, DC, dated 10/30/84, with attached LER 84-006
- (26) Impell Corporation report, dated August 1984
- (27) NAPS memorandum from G. LUDDEN to A. FRALEY, dated 10/15/84 regarding "History of Ring Duct Coatings Units I and II"
- (28) NAPS memorandum from K. CUMMINGS to A. FRALEY, dated 10/15/84 regarding purchase of Mobil 13-R-50 material
- (29) Label from Dereka No. 505 Red Primer paint can
- (30) PCSPR's (5 sheets) for Primer Coating, Unit 1 ventilation ring ductwork
- (31) PCSPR's (5 sheets) for Finish Coating, Unit 1 ventilation ring ductwork
- (32) PCSPR's (4 sheets) for Primer and Finish Coatings, Unit 2 ventilation ring ductwork



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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

AUG 13 1984

*Handwritten signature/initials*

Docket Nos.: 50-338  
and 50-339

MEMORANDUM FOR: James R. Miller, Chief  
Operating Reactors Branch #3  
Division of Licensing

FROM: Leon B. Engle, Project Manager  
Operating Reactors Branch #3  
Division of Licensing

SUBJECT: SUMMARY OF MEETING WITH THE VIRGINIA ELECTRIC  
AND POWER COMPANY (VEPCO) REGARDING NON-QUALIFIED  
PAINT INSIDE CONTAINMENT AT NORTH ANNA POWER  
STATION, UNITS NOS. 1 AND 2

Introduction

A meeting was held on Friday, August 3, 1984, with VEPCO and the NRC staff in Bethesda, Maryland regarding the subject as noted above. A list of attendees is provided in Enclosure 1.

Prior to the August 3, 1984 meeting, Region II had received allegations that certain paint inside containment at NA-1 was non-nuclear qualified. VEPCO commenced an investigation into the allegation and on Friday, July 27, 1984, Region II notified NRR that VEPCO had confirmed the existence of non-qualified paint on the surface of the lower ring ventilation ducting inside the NA-1 containment. The surface area affected was approximately 8100 square feet.

The ventilation ring in the lower level of containment consists of galvanized surfaces. Although these galvanized surfaces are designed to withstand a containment environment, infrequent boric acid solution had impinged on these galvanized surfaces and caused minor corrosion. To prevent further corrosion on the lower ring duct, VEPCO, as a preventive measure, had the ducts painted during December 1982 and January 1983.

In response to the allegation, VEPCO, in mid-Summer 1984, checked the NA-1 Protective Coating Surface Preparation Records and determined that the coatings applied to the lower ring duct were:

- ← (1) An alkyd primer, Mobil Chromax Red Primer, No. 13-R-50, and
- (2) A catalyzed polyamide epoxy finish, Dupont Corlar Dual Build Epoxy Enamel, No. 823-Y-67632 with Activator No. VG-Y-8839.

EXHIBIT (3)

Page 1 of 15

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Upon further investigation, VEPCO determined the Mobil Alkyd Primer was non-nuclear qualified and, although the Dupont epoxy (finish coat) was nuclear qualified, neither primer nor topcoat were approved for use on galvanized surfaces. As noted previously, the affected area was approximately 8,100 square feet of ductwork and supports which had been coated with the above noted primer and finish coats. The average dry film thickness of the coating is 5 to 6 mils.

Based on the above, Region II requested NRR assistance since paint expertise rested on the NRR staff. On Wednesday, August 1, 1984, VEPCO requested a meeting for Friday, August 3, 1984 with the appropriate NRR staff in Bethesda, Maryland, in order to discuss these matters.

In addition, upon the identification of non-qualified paint at NA-1, VEPCO immediately proceeded to scrutinize the NA-2 Protective Coating Surface Preparation Records. These records indicated conflicting reports as to specific applications of primer and finish coats of paint applied to the NA-2 lower ring ventilation ducts. VEPCO, therefore, determined to shut down NA-2 until such time that conflicting paint records could be unraveled. Shutdown of NA-2 commenced at approximately 18:00 hours, Thursday, August 2, 1984. It is noted that NA-1 was in a refueling outage and scheduled for restart August 12, 1984.

Upon discovery of the non-qualified paint, VEPCO initiated test programs to evaluate the performance of the applied coating under Design Basis Accident (DBA) conditions and to verify the coating materials used. Test coupons were selected from representative samples of ductwork and sent to the Oak Ridge National Laboratory (ORNL) for DBA testing. VEPCO specified that the test and procedures to be used at ORNL would be in conformance with the NA-1&2 Updated Final Safety Analysis Report (UFSAR) as specified in Appendix 3D, "Testing of Protective Coatings Under Design Basis Accident Conditions". In addition, VEPCO initiated chemical analyses to be performed by KTA-Tator to verify the generic type of coatings applied to the ductwork.

### Discussion

On Friday, August 3, 1984, VEPCO presented its meeting agenda to the staff to be followed and discussed during the meeting. A copy is provided as Enclosure 2. NRR requested Region II attendance could not be met due to existing Region II manpower requirements.

VEPCO stated that it is necessary that protective coatings within Containment remain intact on applied surfaces following postulated Loss of Coolant Accident (LOCA) environmental conditions. VEPCO further stated that the NRC approved NA-1&2 FSAR specifies that coatings applied after initial construction must meet the technical performance requirements for simulated DBA testing set forth in the American Nuclear Safety Institute (ANSI) standard N101.2-72. VEPCO went on to say that, since the coating system utilized at NA-1 on the lower ring ventilation ducts had not been nuclear qualified, corrective action was required by VEPCO.

VEPCO had evaluated various options for implementing corrective actions. These options are:

- (1) Install new ductwork which would impact the NA-1 restart schedule of August 12, 1984 by 3 months and represent significant cost expenditures and shutdown time.
- (2) Remove the non-qualified paint from the ductwork and supports by chipping and abrasive tools which would cause a non-suitable environment for NRC required electrical work underway to meet NUREG-0737, "Post TMI Requirements".
- (3) Install a stainless steel wire mesh screen over the affected surfaces of the ductwork and supports in NA-1 containment to retain any coating material which could potentially cause blockage of the containment sump screens.

Because of the above noted impacts and associated problems noted in items (1) and (2) above, VEPCO had decided to take corrective action specified in item (3) above.

VEPCO stated a stainless steel wire mesh screen would be installed over all affected surfaces of the coated ductwork and supports. The installed screen would be a 8x8 mesh per linear inch and fabricated from Type 304 stainless steel. The width of the screen opening would be 0.097 inch, which is smaller than the opening of the fine mesh sump screen (0.120 inches). Sheet metal ribs would be installed approximately every four linear feet of ductwork and the mesh screen then riveted to the metal ribs. In addition, a seismic analysis would be performed to ensure that the ductwork and supports with the increased weight would be within the envelope of design criteria.

VEPCO then provided its bases for ensuring that the proposed corrective actions for non-qualified paint would not result in any impact on the operation of safety required equipment required to mitigate the consequences of a DBA. Assuming that the non-qualified paint coating releases from the galvanized substrate following a DBA, the wire mesh surrounding the ductwork would entrap a significant portion of the paint. In addition, the entrapment of the paint particles on the mesh screen would build up on the screen as a function of time and, thereby, allow only an increasing preferential small size of paint particles to pass through the screen. Also, a large portion of the lower ring ductwork is not located in the area of containment sump and water on the floor in these areas flows to the sump at a low velocity following a postulated LOCA. A large portion of the paint particles which might escape the wire mesh screen would settle out or become entrapped elsewhere before reaching the fine mesh screen on the containment recirc pumps. Finally, any paint particles reaching the containment sump would be of a smaller size than the pump screen mesh and could be circulated through the recirc-system.

VEPCO then provided the staff with an update on the status of paint conditions at NA-2. VEPCO stated that its decision to shutdown NA-2 the previous day was due to the uncertainty and validity of paint records which might verify paint qualification on the NA-2 lower ring ventilation ducting. This ducting had been painted in April and May 1983 to mitigate corrosive effects as in the case for NA-1. VEPCO stated that the NA-2 Protective Coating Surface Preparation Records indicated that the following coatings were applied over the galvanized surface.

- (1) Primer: Keeler and Long White Epoxy Primer 6548
- (2) Finish: Keeler and Long White Epoxy Finish 6548.

VEPCO stated that at this time the above identified primer and finish coats present a coating system which is nuclear qualified over carbon steel surfaces. However, disparities in paint records could not provide 100 percent assurance that the identified coatings were in place on the affected ring duct surface area. Therefore, test coupons had been prepared and expedited to ORNL for DBA testing as in the case for NA-1.

Finally, VEPCO stated that paint procedures and records will be reviewed and revised to provide stricter quality control for verifying qualified paint inside containment is properly applied and nuclear qualified.

#### Conclusions

The NRC staff recessed to consider VEPCO's proposals and determined the following, which was presented to VEPCO.

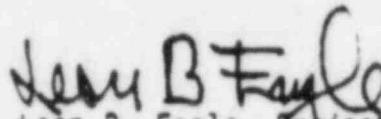
- (1) The results of particle-dynamic calculations of particle interactions and granular flow have shown that grading of small size fines can in certain cases collect on surfaces with openings of greater size than the particle fines in question. The staff suggested the licensee assure themselves that such interaction would not take place.
- (2) The staff finds VEPCO's corrective action (as discussed above) to be acceptable for NA-1. Should final analysis confirm similar problems for NA-2 ring duct ventilation paint, the proposed corrective measures are also acceptable for NA-2.
- (3) VEPCO's corrective measures are acceptable on a short term and long term basis providing the results of the Comanche Peak Task Force (non-qualified paint) identify no new generic concerns.
- (4) The staff also recommends that VEPCO upgrade quality control for qualified paint records inside containment and the procedures for application of surfaces inside containment.

Subsequent Events Related To Meeting Summary

The meeting was adjourned at approximately 2:00 pm, Friday, August 3, 1984, wherewith NRR called Region II at approximately 2:30 pm and stated the staff's conclusions as stated above. Region II indicated the staff's finding, regarding the licensee's corrective action to be acceptable to Region II.

On Tuesday, August 7, 1984, VEPCO informed NRR that preliminary tests conducted by ORNL had confirmed degradation of both NA-1&2 paint samples under simulated DBA conditions. In the case of NA-1, a significant 75-80% of sample surface was observed to be blistered. For NA-2, a 10-20% flaking was observed in a failure adhesion test. ORNL testing is not scheduled to be completed until approximately September 1, 1984. Therefore, the corrective measures identified above will be implemented at both NA-1&2.

The corrective measures will be completed at NA-1 prior to restart, now scheduled for August 23, 1984. NA-2 was officially placed in its refueling outage on August 9, 1984 and the corrective measures will be completed prior to restart (not yet officially established).



Leon B. Engle, Project Manager  
Operating Reactors Branch #3  
Division of Licensing

Enclosures:  
As stated

List of Attendees

for

Meeting With VEPCO

on

August 3, 1984

Subject of Meeting: Non-Qualified Paint Inside Containment

NRC

V. Benaroya  
S. P. Chan  
L. B. Engle  
J. S. Guo  
D. Sells  
F. Witt

VEPCO

J. M. Anderson  
R. M. Berryman  
M. L. Bowling  
J. O. Eastwood  
A. D. Fraley  
R. B. Green  
R. Hardwick



AGENDA

INTRODUCTION

M. L. BOWLING

DISCUSSION OF COATINGS APPLIED

R. M. BERRYMAN

DISCUSSION OF CORRECTIVE ACTION  
TO BE TAKEN

R. M. BERRYMAN

ATTENDEES

M. L. BOWLING

A. D. FRALEY

R. HARDWICK

R. M. BERRYMAN

R. B. GREEN

J. M. ANDERSON

J. O. EASTWOOD

**POTENTIAL UNQUALIFIED COATING  
CONTAINMENT AIR COOLING AND PURGING SYSTEM  
NORTH ANNA UNIT NO. 1**

- Ventilation ring duct in the lower level of containment was coated in December, 1982 and January, 1983 to mitigate corrosion.
- Protective Coating Surface Preparation Records indicate that the coatings applied were:
  - (1) An alkyd primer, Mobil Chromax Red Primer, No. 13-R-50
  - (2) A catalyzed polyamide epoxy finish, Dupont Corlar Dual Build Epoxy Enamel, No. 823-Y-67632 with Activator No. VG-Y-8339
- The Mobil Alkyd Primer is not nuclear qualified. The Dupont epoxy is nuclear qualified but neither primer or topcoat is approved for use over galvanized surfaces.
- Approximately 8,140 ft.<sup>2</sup> of ductwork and supports have been coated. Average dry film thickness of the coating is approximately 5-6 mils.

CORRECTIVE ACTION  
UNIT NO. 1

- It is necessary that protective coatings within Containment remain intact following a postulated LOCA.
- UFSAR states that coatings applied after initial construction must meet the technical performance requirements for simulated DBA testing set forth in ANSI N101.2-72.
- Since the coating system utilized has not been nuclear qualified, corrective action will be taken.
- The corrective action will be to install a stainless steel wire mesh screen over the coated surfaces of the ductwork and supports in Unit No. 1 Containment to retain any coating material which could potentially cause blockage of the sump screens.

FROM NO ANNA TO REG 2 08/24/84 11:15 P.12

**DESCRIPTION OF PROTECTIVE COVERING SYSTEM**  
**UNIT NO. 1**

- A stainless steel wire mesh screen will be installed over all surfaces of the coated ductwork and supports.
- Screen to be installed will be 8 X 8 mesh per linear inch fabricated from Type 304 stainless steel. The width of the opening is 0.097 inch.
- The maximum width of the opening is smaller than the opening in the fine mesh sump screen (0.120 inch).
- Sheet metal ribs will be installed around the ductwork and the wire mesh screen will be riveted to the metal ribs.
- A seismic analysis will be performed to ensure that the ductwork and supports will meet design criteria with the increased weight.



SAFETY EVALUATION  
UNIT NO. 1

- Assuming that the unqualified coating releases from the substrate following a postulated LOCA, it is unlikely that paint would pass through the wire mesh surrounding the ductwork.
- Any paint particles that might pass through the protective screen would be of a size that would pass through the sump screens.
- A large portion of the ductwork is not in the vicinity of the containment sump and water on the floor in these areas flows to the sump at a low velocity following the postulated LOCA.
- Paint particles which may escape the wire mesh screen that do not settle out or become entrapped elsewhere will pass through the fine mesh screens on the pump suction and be circulated through the system.
- Therefore, there will be no impact on the operation of safety related equipment required to mitigate the consequences of the accident.

UNQUALIFIED COATING TEST PROCEDURE  
UNIT NO. 1

- Test programs were initiated to evaluate the performance of the applied coating under DBA conditions and to verify the coating material used.
- Test coupons were selected from representative samples of the ductwork and sent to ORNL for DBA testing. The test procedure to be used will be as specified in Appendix 3D of the UFSAR.
- Chemical analyses will be performed by KTA-Tator to verify the generic type of coatings applied to the ductwork.

PROTECTIVE COATING APPLIED TO  
CONTAINMENT AIR COOLING AND PURGING SYSTEM  
NORTH ANNA UNIT NO. 2

- Ventilation duct in lower level of Unit No. 2 containment was coated in April and May, 1983.
- Protective Coating Surface Preparation Records indicate that the following coatings were applied over the galvanized substrate:
  - (1) Primer: Keeler and Long White Epoxy Primer 6548
  - (2) Finish: Keeler and Long White Epoxy Finish 6548
- Coating system applied is nuclear qualified over carbon steel surfaces.
- Test coupons have been prepared and sent to ORNL for DBA testing.

MEETING SUMMARY DISTRIBUTION

Licensee: Virginia Electric and Power Company (VEPCO)

\*Copies also sent to those people on service (cc) list for subject plant(s).

Docket File  
NRC PDR  
L PDR  
ORB#3 Rdg  
ORB#3 Summary File  
JRMiller  
PMKreutzer  
Project Manager  
OELD  
ELJordan  
JMTaylor  
ACRS-10  
NRC Participants

RESULTS OF INTERVIEW WITH FLOYD RAY ASKEW ON  
OCTOBER 10, 1984 AS PREPARED BY INVESTIGATOR  
ROBERT H. BURCH

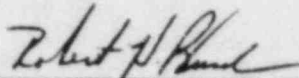
On October 10, 1984, Floyd Ray ASKEW was interviewed at his residence by NRC Investigator Robert H. Burch. ASKEW advised that he resides at <sup>He</sup> said he is currently self employed as a painter and advised he previously worked as a painter with Fruin-Colnon (FC) at the North Anna Power Station (NAPS) from approximately June 1982 to March 1983 and again from June to December 1983.

ASKEW said that he was assigned to the "sand house" during his employment with FC where he mixed, batched and labelled coating materials in accordance with the requirements of North Anna Specification 1016 (NAS-1016). He said he was supervised during this period of time by NAPS employee Robert BAULER and FC employee Marvin LANG. ASKEW advised that he was directly involved with the mixing, batching and/or labelling process for the coating materials used on the ventilation ring ductwork coating project during December 1982 and January 1983. He said that his supervisor Robert BAULER told him to send Debevoise Dereka No. 505 Red Primer from the "sand house" to Unit 1 containment as the primer or first coating for the ventilation ring ductwork and to use Dupont White Epoxy as the top or finish coating. ASKEW advised that he has not seen the Quality Control (QC) records associated with this project but he emphasized that, at the direction of BAULER, Dereka No. 505 and not Mobil Chromox 13-R-50 was used as the primer. ASKEW further advised that BAULER instructed him to "send all primer paint to the Unit 1 containment building" for the ventilation ring ductwork coating project in unmarked buckets, apparently so no one would know what type of paint was being used. He said that this practice violated the NAPS coating procedures regarding container labelling, however, since BAULER was the supervisor he did not dispute his instructions. ASKEW also advised that from his experience as a painter he was aware that Dereka No. 505 and Dupont Corlar Epoxy were not compatible but said he did not voice this concern to BAULER. ASKEW said he also knew from experience that galvanized steel should not be coated but again stated he did not express any objections regarding this matter to BAULER. He advised that the NAPS coating procedures require QC inspectors to verify the mixing, batching and labelling process, however, at no time while preparing coating materials for the Unit 1 ventilation ring ductwork did any QC inspector perform these required tasks. ASKEW advised that the Unit 2 ventilation ring ductwork was coated during the period in mid 1983 when he was not employed by FC at the NAPS. He stated that he did not participate in the Unit 2 project since he was not employed at the site. At the conclusion of the interview ASKEW provided the investigator with the manufacturers label from a can of Dereka No. 505 coating material which,



according to ASKEW, is identical to the labels which were affixed to the containers of the primer coating used on the Unit 1 ventilation ring ductwork.

This Results of Interview was prepared by Investigator Robert H. Burch on October 10, 1984.

  
Robert H. Burch, Investigator

STATEMENT

PLACE: North Anna Power Station

DATE/TIME: 9-26-84/10:45

I, George Henry Hunley, do hereby make the following voluntary statement to Robert H. Burch who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I do hereby make this voluntary statement without any threats having been made against me or any promises extended to me. I reside at

I have worked at the North Anna Power Station (NAFS), Mineral, Virginia since 1974. I worked with Stone and Webster from 1974 to 1979 during construction and I worked with VLPCO from 5/80 to 6/81 and with Fruin-Colnon/FC from 6/81 to 5/83 when I was laid off. I came back to FC in 6/84, where I am presently employed. I have always worked as a painter at NAFS, at most of the buildings on the site. I work out of the Painters Local 1018 in Richmond, VA. and my business agent convinced me to return to FC in 6/84. I had experienced some very undesirable situations with Robert BAULER when I was previously working for FC but I found that BAULER had been terminated during the time I had been on layoff. BAULER was a very strange person and he insisted that everything be done his way. To get his way, he threatened painters with layoffs and since he controlled the FC painters we all did as he would say.

6N7

In about 12/82 I was

assigned to a crew of FC painters to coat the ventilation ductwork in the unit one containment building (RC1). BAULER made the work assignments and supervised this project. He told us there was a big rush to get the job done and he pushed us constantly to complete this job. I did not select the paint material to be used on this project but when I learned the type of primer to be used I explained to BAULER that it was not compatible with the top coat that had been selected. To my recollection, the primer used on this/RC1 project was a Devoise 505 Dark Red Enamel and the top coat was a Dupont Corlar white epoxy. BAULER told me that the two coating materials were compatible because he had checked with the manufacturer and had been assured that the two were compatible. I did ~~not~~ question him as to whether the coating material ~~was~~ approved for a containment environment. <sup>GHH enamel</sup> <sup>GHH WAS</sup> <sup>GHH</sup> and he told me the manufacturer said it was. I knew that the surface to be coated was galvanized steel and was aware that the North Anna Specification 1016 (NAS 1016) on coating in containment did not recommend coating a galvanized surface but I did not mention this to <sup>GHH</sup> ~~BAULER~~ <sup>BAULER. He was already aware of this.</sup> <sup>GHH</sup> I was assigned mainly to the inner ring ductwork in RC1 and participated in the entire process from surface preparation to top or finish coating. In my opinion the surface preparation was very carelessly and hurriedly conducted. At first we scraped, sanded and washed the top, outer side and bottom of the vent ductwork but this proved to be a slow, time consuming process so the order was given by BAULER to just wipe down these surfaces with a <sup>GHH</sup> ~~cloth~~ cloth dampened with thinner. There was only a minimum of sanding and scraping and there was no grinding with a grinder as stated in the Protective Coating Surface Preparation Records for the primer coat. We mostly wiped dust from the surfaces of the ventilation ductwork and scraped off any crystalline deposits <sup>GHH</sup> of boric acid corrosion that had accumulated in various places. There was some light sanding

of these spots but nothing of the magnitude that is represented by the Protective Coating records. Mr. Burch has asked <sup>GHH</sup> ~~me~~ me to review these records <sup>GHH</sup> for the primer coating and top coating in RCl and point out any discrepancies in these records that I may so note. <sup>GHH</sup> In reviewing these records it appears that BAUMER has written most of the information on the forms. I also note the signatures of <sup>GHH</sup> ~~BAUMER~~ <sup>Baumer and</sup> QC Inspectors Bill Harris or Bill Burns on these five records. This indicates to me that both BAUMER and the inspectors have approved of all the information on the records, that it is true and correct, and that the work of coating the ventilation ductwork in RCl was accomplished in the manner represented by the form. The first discrepancy I note in all of these forms is SP # 10 surface preparation, obtained by grinder. According to NAS 1016 an SP#10 surface can be obtained only by near white sandblasting, a practice prohibited in containment. Also, if galvanized steel was blasted, it would disfigure and possibly destroy the material. We were working in respirators during this project <sup>GHH</sup> and grinding or blasting as indicated would have created serious contamination problems. <sup>GHH</sup> An SP <sup>#10</sup> ~~10~~ surface was not achieved and only a slight amount of grinding/was done with sandpaper. I also note that the profile number of 1.0 or 1.5 is in error as this profile <sup>GHH</sup> cannot be achieved with sanding. <sup>GHH</sup> I also note that the sandpaper texture on the primer Protective Coating records states a medium paper was used. Medium paper is in the range of 100-120 grade and I recall that we used 40, 60 and 80 grade paper. <sup>GHH</sup> <sup>Primer and top coat</sup> The records also state that for final cleaning, "dusting and vacuuming" was performed and as I recall these procedures were never done. I also note that the <sup>GHH</sup> <sup>Primer</sup> records state a Mobil Chromax primer Red 13-R-50 was used and this is not correct. As I stated above a 505 dark red primer was used. Ray Askew, an FC painter who works with me <sup>GHH</sup> <sup>me</sup> told ~~me~~ he would swear under oath that the primer used was 505 because he mixed this material at the sand house and sent it down to RCl in unmarked con-

tainers. He said BAULER told him to do this. with regard to the Mobil Chromax primer reflected on the Protective Coating records, I have not seen any of this type primer at WAFs since they built the plant. As stated above, the signatures of Bauler and Harris or Burns on these forms indicates they have approved the records for accuracy and completeness of information contained therein, as well as certifying that the work was done as indicated. This is not the case since I know there are deficiencies in these records and that some of the information is not correct. To me this represents a falsification of records and in my opinion Bauler and Harris or Burns did this knowing that the information was not correct. As I stated above I was involved mostly on the inner rings as Bauler assigned his friends on the outer ring and away from the high rad areas. During the time <sup>GHH</sup> I worked on ACI ve <sup>tion</sup> ductwork, I never saw any QC inspectors in this area. In my opinion, the surface prep and QC records were prepared by Bauler in the paint shop and were signed there by him, Harris and Burns. While applying the primer and top coats I never observed a QC inspector with gauges measuring Dry and Wet Film thicknesses even though both the primer and top coat records show that Dry Film measurements were taken. The QC inspectors are supposed to inspect at various hold points in the <sup>GHH Coating</sup> procedure, however, while coating ACI ductwork I do not recall inspectors performing this function. I do not know why inspections were not made but I suspect that they got together with Bauler and took his word that the work was done.



The painters were always rushed to complete coating the vent ductwork in RC1 by Bauler. I did not participate in the coating of RC2 ductwork but I understand there were also problems associated with that project. In my opinion, VEPCO relied too much on Bauler regarding painting matters. His supervisors Wilson Nobles and Johnny Jones were not <sup>GHH Knowledgeable</sup> of coating procedures and they delegated all of this <sup>GHH Authority</sup> to Bauler. Bauler, in my opinion was not suited to supervise. In my opinion, VEPCO has tried to blame <sup>GHH</sup> the painters for <sup>GHH Coating</sup> the problems associated with RC1 and 2 vent ductworks but we only followed the orders of Bauler.

I have read the foregoing statement consisting of 5 <sup>GHH</sup> ~~handwritten~~/typed pages. I have made and initialed any necessary corrections. I swear that the foregoing statement is true and correct. Signed on 9/26/84 at 209PM.

SIGNATURE: George Henry Hanley  
NAME

Subscribed and sworn to before me this 26<sup>th</sup> day of September 1984 at NAPS, Mineral, Virginia.

INVESTIGATOR: Robert J. Baul  
NAME

WITNESS: \_\_\_\_\_  
NAME/TITLE

RESULTS OF INTERVIEW WITH MARVIN NASH LANG  
ON SEPTEMBER 12, 1984 AS PREPARED BY  
INVESTIGATOR ROBERT H. BURCH

LANG was interviewed at the office of the Senior Resident Inspector, Virginia Electric and Power Company (VEPCO), North Anna Power Station (NAPS), Mineral, Virginia on September 12, 1984. He advised he has worked at NAPS since July 1976; first as an employee with Stone and Webster until July 1981 and currently as a General Foreman with Fruin-Colnon, Inc. (FC). He said he supervises the daily activities of the contract painters supplied by FC, a personnel service company at the NAPS site.

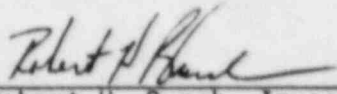
LANG advised that the FC paint work is assigned, directed and managed by a VEPCO Construction Department Supervisor. He identified the VEPCO supervisor of painters in 1982 and 1983 as Robert BAULER, who has been terminated from the company for approximately nine months. LANG described BAULER as an overbearing individual who had a "know it all" attitude. He said BAULER was antagonistic towards the contract painters and he frequently harassed and intimidated them by threatening to terminate their employment. LANG recalled that about November 1982 he first discussed coating the Air Cooling and Purging System (ACPS) ventilation ductwork in the NAPS Unit 1 Reactor Containment Building (RC1). He said that on this occasion Joe HARPER, VEPCO Construction Superintendent asked him, Ron STILES, Construction Coordinator and Jim RUSSELL, Construction Supervisor to review boric acid damage to the ACPS ventilation ductwork in the RC1 building. He said HARPER instructed them to review the damaged ductwork and make a recommendation to either (1) coat the ductwork or (2) replace the ductwork. LANG advised RUSSELL expressed the opinion that the ductwork could be coated. He said he concurred with RUSSELL's opinion so STILES informed HARPER of this recommendation. LANG said the Maintenance Report (MR) had been prepared and submitted on June 3, 1982 by STILES. He said the Request for Work was not prepared and signed by the VEPCO Maintenance Department until December 13, 1982, a delay of approximately six months. LANG stated that although he was not privileged to VEPCO conversations regarding the reason for the delay he assumed it was related to having a convenient plant outage to complete the coating project. LANG reviewed both the MR and Request for Work pertaining to RC1. He noted that the Request for Work form contained a block entitled "QA Approval" which was marked "no." LANG advised he did not know who checked this block in the manner indicated and stated that there should have been "QA Approval" for this project. He noted that the MR form contained a block entitled "Safety Related" which was also marked "no." LANG advised that he did not know who had completed this section of the MR and said he was not qualified to make this type of decision.

LANG advised that he and VEPCO Supervisor Robert BAULER experienced personality and philosophical differences prior to the beginning of the ventilation ductwork coating project in RC1. He said for this reason he was excluded by BAULER from the paint crews working in the RC1 building during surface preparation and primer coating of the ductwork. He stated he participated in the topcoat application in the RC1 building. LANG said he knew that the ventilation ductwork was constructed of galvanized steel and assumed that the VEPCO construction and engineering personnel had

conducted the necessary engineering and safety reviews and had authorized use of the selected coating materials over a galvanized surface. He said he was not familiar with the contents of North Anna Specification (NAS) 1016 at the time the ventilation ductwork was coated in the Unit 1 and 2 containments. He said the painters relied upon VEPCO supervisors in the construction and engineering departments to direct all coating activities, including surface preparation and the selection of materials, in accordance with NAPS coating procedures. He said he did not realize at the time coatings were applied that neither the NAPS engineering nor the construction departments had conducted an evaluation of this activity and that the painters followed the directions and instructions of NAPS Construction Department Supervisor BAULER. LANG said that VEPCO appeared to blame the painters for using improper coating in Unit 1 and for coating galvanized surfaces in Units 1 and 2. He said VEPCO is currently writing new coating procedures and specifications which will be more compatible with an operating plant and the painters who were dismissed in mid 1984 are being reinstated when they requalify in accordance with the revised procedures. LANG said the new procedures are designed to more closely control coating activities in a containment environment. He opined that the reasons non-nuclear qualified coatings were painted onto a galvanized surface are failure by engineering and construction departments to perform a review and evaluation of the project; failure by the Quality Assurance Department to properly perform their duties and failure of all departments to coordinate their responsibilities regarding this project. LANG advised that he is not aware of any willful or deliberate attempt to violate procedures and said he does not personally know of any false QC records associated with the ventilation ring ductwork coatings in Units 1 and 2. LANG did state that some of the Protective Coating Surface Preparation Records for the ductwork in Unit 1 contain the notation "SP#10" in the "Surface to Be Obtained" block and the notation "grinder" in the "Method of Surface Prep" block. LANG explained that according to the NAS-1016 coating procedure, a SP#10 surface can only be achieved by near white sand blasting, a practice prohibited in a containment environment. He said a grinder was not used to prepare the entire ventilation ductwork surface although it could have been used to remove boric acid corrosion build up from the affected areas. LANG advised that the entire surface of the ventilation ductwork was not prepared in the manner indicated by the Protective Coating Surface Preparation Records. He said painters George HUNLEY, Ray ASKEW and possibly others who participated in the ductwork surface preparation in Unit 1 containment could comment regarding this aspect of the coating process.

LANG advised that he was extensively involved with the coating activities regarding the Unit 2 containment ventilation ductwork. He said he telephonically contacted a Mr. CANFIELD, salesman for Keeler and Long, Inc. (K&L), manufacturer of the coatings used on the ductwork in Unit 2 containment to determine if they (coatings) were compatible with a galvanized steel surface. He said CANFIELD informed him that both the primer and finish coats were nuclear qualified and compatible with this type of surface, providing the surface is properly prepared. LANG concluded that he did not question the application of the K&L coatings with any VEPCO officials after learning from CANFIELD that the coatings being used were compatible with a galvanized surface when properly prepared.

This Results of Interview with Marvin Nash LANG was prepared by  
Investigator Robert H. Burch on September 13 and 14, 1984.

  
Robert H. Burch, Investigator



RESULTS OF INTERVIEW WITH WILSON CAREY NOBLES ON  
OCTOBER 18, 1984 AS PREPARED BY INVESTIGATOR  
ROBERT H. BURCH

On October 18, 1984 Wilson Carey NOBLES, Senior Staff Engineer, Virginia Electric and Power Company (VEPCO), Bath County Pumped Storage Facility, Warm Springs, VA 24484, Telephone Number \_\_\_\_\_ was interviewed in his office by NRC Investigator Robert H. Burch. NOBLES advised he has been employed by VEPCO since June 1969 and said he was assigned to the North Anna Power Station (NAPS) as an Engineer in the Construction Department from October 1980 to May 1983.

NOBLES stated that one of his responsibilities at NAPS during the period from July 1981 to December 1982 was the procurement of contract craft personnel utilized at NAPS. He advised that the craft labor contract was administered by Fruin-Colnon, Inc. (FC), a personnel service company commonly referred to as a "body" shop. He said that in about 1981 VEPCO cancelled planned construction on additional generating units at NAPS and some of the limited term and full time VEPCO employees involved with work on the cancelled units were transferred to the two operating units. He stated that one of the individuals so transferred and converted to a full time VEPCO employee was Robert N. BAULER, a former FC union painter and limited term VEPCO employee. NOBLES stated that because of BAULER's experience in the coatings discipline he was assigned as the NAPS Construction Department Coating Supervisor, a first level supervisor, in charge of all safety and non-safety related coating projects. NOBLES advised that BAULER was responsible for selecting and purchasing the correct coatings for particular specified projects, maintaining receipt, accountability and traceability records, preparing and maintaining coating Quality Control (QC) records in coordination with inspectors and interfacing with the NAPS site Quality Assurance department on all matters concerning the quality control process involved in coating activities. NOBLES advised that he supervised BAULER but acknowledged that day to day decisions concerning coating projects were delegated to BAULER with minimal interference.

NOBLES stated that he recalled the coating project associated with the Unit 1 Air Cooling and Purging System (ventilation ring ductwork) during December 1982 and January 1983. He stated that the NAPS Operations Department had previously reported, as a result of a walkdown inspection, advanced boric acid corrosion on certain portions of the inner ventilation ring ductwork and they had referred this problem to the NAPS Station Maintenance Department for resolution. He stated that he, Johnny JONES, then the Construction Department Superintendent and BAULER discussed coating the ventilation ring ductwork as a "temporary fix" until such time as the affected portions of the ductwork could be permanently replaced. NOBLES advised that at the time of this discussion, possibly in November 1982, he, JONES and BAULER were aware that the ventilation ring ductwork was constructed of galvanized steel. He said he was also aware, from past personal experiences, that galvanized steel should not be coated. NOBLES advised that he was not aware that coating the galvanized steel ventilation ring ductwork violated NAPS Procedure NAS 1016, which governs coating in a containment environment, nor was he aware of the safety implications of

EXHIBIT 9

Page 1 of 4 Pages



paint peeling from the ductwork during a Design Basis Accident (DBA). NOBLES said he mentioned to JONES the fact that paint did not adhere well to galvanized steel, however this was not mentioned to him from an objectionable, dissenting viewpoint but rather as a matter of general conversation. He said the final decision to coat the ventilation ring ductwork was made by the NAPS Maintenance Department. He said that to the best of his knowledge, JONES informed NAPS Maintenance management officials that it was unacceptable to coat galvanized steel with any type of coating. He said that JONES apparently was not aware of any safety implications concerning the coating of the ventilation ring ductwork in Unit 1 since he (JONES) had the ultimate responsibility of accounting for the work performed on this system. He described JONES as an extremely safety conscious individual and said he would not have allowed the ventilation ring ductwork to be coated, knowing it to be safety related without an engineering evaluation. NOBLES was unable to explain why no safety evaluation was performed regarding this coating activity.

NOBLES stated that inasmuch as BAULER was the Construction Department Coating Supervisor he was responsible for selecting the proper coating materials for all projects. He said BAULER selected the materials, both primer and topcoating, that was used to coat the Unit 1 ventilation ring ductwork in December 1982 and January 1983. NOBLES advised that BAULER was supposed to have contacted the manufacturer of the coating material selected to ensure that it was nuclear qualified for use in a containment environment. He said he did not know which coating materials had been selected by BAULER or if he had in fact contacted the manufacturer regarding their qualification for use in a containment environment.

NOBLES denied that undue pressure had been exerted upon members of the paint craft to complete the coating project during the Unit 1 plant outage in late 1982 and early 1983. He said the only pressure applied by supervision was the constant and frequent reminder to all craft personnel that all work, including painting, should be completed during the scheduled outage so the plant could begin operating as planned. He said he did not consider his actions in this respect to be other than the normal supervisory encouragement which is present in all outage situations. He explained that all work must be accomplished within a particular window of time and that this concept requires constant and close monitoring of craft activities to ensure that all schedules are completed. NOBLES stated he is unaware of any VEPCO construction manager conducting himself in any manner other than he has described. He stated that the painters were basically an unhappy and malcontent group and they were beset with internal management problems and complained of supervisory discrimination. NOBLES stated he began to recognize that BAULER was not using sound management practices about December 1982. He said he began to receive complaints about the manner in which BAULER managed and supervised the painters and stated he also learned that BAULER was "making deals" with the union hall steward to retain his (BAULER's) relatives on the job at the NAPS, in favor of other painters. NOBLES said this represented a conflict of interest since in effect a VEPCO supervisor was orchestrating and influencing the employment practices of the painters union and the contract service company. He stated that as a result of these and other similar activities BAULER fell into "general disfavor" with other NAPS construction department supervisors. NOBLES explained that BAULER subsequently suffered a

disabling back injury at NAPS which required medical attention and lost days from work. He stated unequivocally that he has never forced or coerced BAULER into working while he had a back injury to prevent NAPS from having "lost days" due to accidents by VEPCO employees.

NOBLES explained that the Protective Coating Surface Preparation Records, the QC documents for the Unit 1 ventilation ring ductwork, were also the responsibility of Coating Supervisor BAULER. He said BAULER always prepared these records even though the QC inspectors were supposed to personally verify all data entered on these forms by BAULER. He stated he is not personally aware of the manner in which the QC inspectors verified BAULER's data on the forms, however, in his opinion their (QC inspectors) signature on the form certifies they had accurately and personally verified all data thereon.

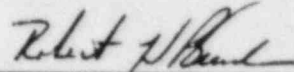
NOBLES advised that in his opinion, no one at NAPS realized or was aware that coating procedures were being violated when the Unit 1 ventilation ring ductwork was coated. He explained that since BAULER was delegated responsibilities to ensure that procedures were followed and the proper coating material were utilized, none of the management officials in the Maintenance, Construction, Engineering or Operations Departments became involved with this activity. NOBLES further stated that he is not aware that BAULER and the QC inspectors collaborated to falsifying the QC records associated with the Unit 1 ventilation ring ductwork coating project. He said he always assumed that the QC department had performed independent inspections and/or verifications rather than merely accepting the data provided by BAULER. NOBLES reiterated that the signature of the QC inspector on the Protective Coating Surface Preparation Records indicates that the inspector has in fact independently verified the data reflected on the form. NOBLES advised that he was unable to comment regarding the contents of the QC records associated with the Unit 1 ventilation ring ductwork coating project since BAULER was responsible for completing these documents as a part of the total project.

NOBLES repeated that when he directed BAULER to supervise and coordinate the Unit 1 ventilation ring ductwork coating project, he (NOBLES) never considered that the paint could peel from the galvanized steel surfaces in a DBA or Loss of Coolant Accident and subsequently clog the filters and screens in the containment sump pumps. He stated he now recognizes the safety significance involved but did not at the time the work was accomplished. NOBLES reiterated that he is unaware of any NAPS management officials who deliberately violated plant coating or safety procedures when the coating activities were performed on the Unit 1 ductwork. He also stated he is unaware that any of these officials knew the coating materials selected for this project were not nuclear qualified.

NOBLES emphatically denied any intentions or knowledge of wrong doing regarding the Unit 1 ventilation ring ductwork coating project. He reiterated that this project should have been initiated under a Design Change Package which would have required an engineering evaluation. He again stated he did not know why this was not done but said this was not his responsibility. He said if he had recognized safety implications regarding this project he would have taken appropriate measures to have a

safety evaluation completed. NOBLES said he did not participate in the planning or performance of coating activities regarding the Unit 2 ventilation ring ductwork in April 1983.

This Results of Interview with Wilson Carey NOBLES was prepared by Investigator Robert H. Burch on October 22, 1984.



Robert H. Burch, Investigator

RESULTS OF INTERVIEW WITH JOHN MICHAEL JONES, SR.  
ON DECEMBER 8, 1984 AS PREPARED BY INVESTIGATOR  
ROBERT H. BURCH

On December 8, 1984, John Michael JONES, Sr., Project Manager, Power Cutting Incorporated, Lake Bluff, IL, was interviewed at his residence by NRC Investigator Robert H. Burch. JONES advised he resides at

He said he was employed by Virginia Electric and Power Company (VEPCO) at the North Anna Power Station (NAPS), Mineral, VA from March 1977 to March 1984. He said he served as the Construction Superintendent from November 1980 to May 1983.

JONES stated he recalled the ventilation ring ductwork coating projects in Units 1 and 2 during December 1982 and April 1983, respectively. He said that the Unit 1 project was planned during the fall of 1982. JONES explained that the NAPS Maintenance Department, acting upon a request from the Operations Department, sought advice regarding boric acid corrosion on the top surfaces of the ventilation ring ductwork in Unit 1. He said a Maintenance Request (MR) was initiated by the Maintenance Department to mitigate the corrosion problem. JONES advised that he did not know why an MR rather than a Design Change Package (DCP), was used to initiate these projects. He stated that a DCP initiated project requires the engineering department to evaluate and analyze the request for safety implications. JONES advised that, to his knowledge, all coating requests at NAPS had been previously initiated by an MR rather than a DCP and possibly through "habit" the ventilation ring ductwork coating projects were initiated by the Maintenance Department under MR's rather than a DCP's. He advised that he vaguely recalled some corporate engineering involvement in these project coating but could not recall specifics of this involvement or the identity of the engineer. JONES continued that Robert BAULER, the Construction Department Coatings Supervisor was delegated the responsibility to interface with NAPS Maintenance Department officials regarding this project and to coordinate and supervise the completion of the jobs within the time frame allotted.

JONES stated he held preliminary discussions with BAULER regarding the ventilation ring ductwork coating projects. He said he discussed the selection of the primer coating with BAULER to ensure that the material selected would adhere to the surface of the galvanized ventilation ring ductwork. He advised that initially it was decided to coat only the portions of the ventilation ring ductwork that was actually affected by the boric acid corrosion. He said there were two areas of the Unit 1 system which were severely deteriorated and these areas were coated first. He said as the painters moved over the surface of the ventilation ring ductwork, they found other areas of deterioration. He advised that the Maintenance Department, upon being notified of these additional areas of deterioration, decided to coat the entire ventilation ring ductwork. JONES reiterated that he delegated the responsibility for accomplishing this project to BAULER, which included the actual selection of materials, surface preparation and the utilization and supervision of craft painters. He advised that he did not recall the identity of the primer or top coatings and he did not observe the actual accomplishment of this project by the painters. He said BAULER kept him apprised regarding the progress



of the work. JONES advised that, in his opinion, BAULER was knowledgeable of coating procedure NAS-1016 and was instructed by him to accomplish the work in accordance with the requirements of this procedure. He stated he did not interfere with BAULER during the time he was involved with the Unit 1 ventilation ring ductwork coating project.

JONES advised that he did not learn of problems associated with these coating projects until approximately July or August 1984 when a friend contacted him. He said he did not know that non-nuclear qualified coating materials were utilized on this project and nor was he aware that the Protective Coating Surface Preparation Records (PCSPR's) contained inaccurate and discrepant information. He said the PCSPR is a Construction Department document and is completed by the supervisor of the project. JONES reviewed the PCSPR's associated with the ventilation ring ductwork coating projects in Units 1 and 2 Containment and advised that the writing style appears to be that of BAULER. He said NAPS Quality Control (QC) Inspectors are supposed to independently verify the data entered on the PCSPR by BAULER and attest to its accuracy by signing and dating the form. JONES emphasized that he relied heavily upon BAULER regarding the ventilation ring ductwork coating project in Unit 1 and at the time he (BAULER) appeared to do a good job. JONES advised that he was not involved in the Unit 2 ventilation ring ductwork coating project inasmuch as he was not the Construction Superintendent when this project was accomplished.

JONES concluded unequivocally that he was not aware of any procedural violations regarding the Unit 1 project until July or August 1984. He categorically denied that he directed or instructed BAULER or anyone else to violate coating procedures or to place incorrect and discrepant information on the PCSPR's associated with this project. He further stated that he knows of no VEPCO/NAPS employee who intentionally violated the coating procedures or placed false information in the QC records.

This Results of Interview was prepared by NRC Investigator Robert H. Burch on December 10, 1984 and on January 11, 1985.

  
Robert H. Burch, Investigator



RESULTS OF INTERVIEW WITH ALBERT DEMORE FRALEY ON  
OCTOBER 10, 1984 AS PREPARED BY INVESTIGATOR  
ROBERT H. BURCH

On October 10, 1984 Albert DeMore FRALEY was interviewed at the North Anna Power Station (NAPS) site by NRC Investigator Robert H. Burch. He advised he resides at

He said he has been employed by Virginia Electric and Power Company (VEPCO) at the NAPS for approximately 2 1/2 years and has served as the Project Manager (Construction) since December 1982.

FRALEY advised that the Construction Department performs all of the maintenance tasks for NAPS, including Engineering work requests which are initiated by Design Change Package (DCP) and Construction work requests which are initiated by Maintenance Reports (MR). He said DCP initiated work pertains to safety related items and requires an engineering evaluation, whereas MR initiated work is non-safety related and does not require an engineering evaluation.

FRALEY advised that the NAPS Unit 1 ventilation ring ductwork coating project was initiated by a MR and funding was approved for the work about June 1982. He said the actual work did not begin until about December 1982 to coincide with a scheduled outage of the unit. FRALEY recalled preliminary discussions in the fall of 1982 regarding coating of the ventilation ring ductwork with various NAPS personnel in the operations and maintenance departments and with his staff members John JONES, Wilson NOBLES and Robert BAULER. He advised that the reason for coating the ventilation ring ductwork was to mitigate corrosion caused from boric acid leaking onto the top surfaces. FRALEY advised that NAPS management, through initiation of a MR and approval of funding, directed the Construction Department to evaluate and alleviate the problem by coating or painting the affected surfaces. FRALEY opined that since the coating of the ventilation ring ductwork was cosmetic in nature and due to the relative inexperience and lack of knowledge regarding the coatings process, this project was viewed by NAPS management as a non-safety related activity.

FRALEY advised he delegated to JONES, the responsibility of implementing the Unit 1 coating project. He said JONES placed BAULER in charge of the actual work process, including the selection of coating materials, surface preparation activities and utilization of the contract painters provided by labor contractor Fruin-Colnon (FC). He said BAULER was directed to implement this work process in accordance with North Anna Specification (NAS) 1016 requirements. FRALEY said he was satisfied that both JONES and BAULER were knowledgeable of the contents of NAS-1016 and that they were aware of the significance of this procedure as it relates to the coatings process. He said that he was not personally involved in the actual performance of the Unit 1 ventilation ring ductwork coating project and was unaware of any problems associated with this matter until the NRC notified VEPCO in July 1984.

FRALEY advised that upon learning from the NRC in July 1981 that a non-nuclear qualified coating material had been used to coat a galvanized steel surface he reviewed the Protective Coating Surface Preparation

EXHIBIT //

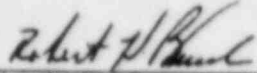
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Records (PCSPR) associated with both the Unit 1 and Unit 2 ventilation ring ductwork coating projects. He advised that the Unit 2 project was initiated in the identical manner as Unit 1 and was completed about May 1983. FRALEY advised that upon reviewing the PCSPR's for Unit 1 in about August 1984 he immediately recognized that there were inaccuracies and incorrect data contained therein. He explained that the discrepancies he noted on these records relate to such items as the manner in which the surface was prepared; the actual primer coating used and other activities associated with the coating process. He said the PCSPR's indicated the surface of the ventilation ring ductwork was prepared by sandblasting, an activity prohibited in a containment environment and that Mobil Chromox 13-R-50 primer was used, an item not in the coating materials inventory for Units 1 and 2. FRALEY advised that he is currently in the process of researching documentation relating to the Units 1 and 2 ventilation ring ductwork coating projects and that a formal report will be prepared for NAPS management regarding this effort.

FRALEY blamed BAULER for preparing and initiating false PCSPR's and stated JONES should have noted these incorrect items of data during his review of the documentation. FRALEY advised that the inaccuracies and discrepancies contained in the PCSPR's indicate a total disregard for NAS-1016 requirements. He opined that BAULER, and perhaps JONES, were both aware that NAS-1016 requirements were being violated when the coating projects in Units 1 and 2 were being performed and that BAULER apparently ignored these requirements for the sake of completing the job expeditiously. FRALEY stated BAULER never consulted him regarding the coating materials used on the ventilation ring ductwork in Units 1 and 2. He said BAULER was never instructed by him to call Keeler and Long regarding materials used during these projects.

FRALEY stated that, in his opinion, there are several reasons why non-nuclear qualified coating materials were used to paint the ventilation ring ductwork in the Unit 1 containment building. He said that the failure of NAPS management to initiate the work under a DCP precluded an evaluation by the engineering department. He said that supervisory inexperience in the coating discipline and the lack of a quality control inspector at NAPS with coatings knowledge, qualifications and certification were also factors. FRALEY advised he was not personally knowledgeable that procedures had been violated and that non-nuclear qualified coating materials had been used until the incident was reported by the NRC in July 1984. He said, to his knowledge, no other NAPS or Construction Department management personnel besides BAULER, and possibly JONES, were aware of procedural violations regarding the ventilation ring ductwork coating project in Units 1 and 2 containment building. FRALEY advised that BAULER was subsequently dismissed from VEPCO and a VEPCO corporate management decision was made not to interview him regarding his involvement in and knowledge of the ventilation ring ductwork coating projects. FRALEY categorically and vehemently denied any VEPCO/NAPS management collusion or conspiracy to violate coating procedures or to falsify quality control records regarding the Units 1 and 2 ventilation ring ductwork coating projects.

This Results of Interview was prepared by Investigator Robert H. Burch on  
October 12, 1984.

  
Robert H. Burch, Investigator

RESULTS OF INTERVIEW WITH JOSEPH RALPH HARPER ON  
DECEMBER 6, 1984 AS PREPARED BY INVESTIGATOR  
ROBERT H. BURCH

On December 6, 1984, Joseph Ralph HARPER was interviewed at the North Anna Power Station (NAPS) site on December 6, 1984 by NRC Investigator Robert H. Burch. He advised that he resides at

He said he has been employed by the Virginia Electric and Power Company (VEPCO) at the NAPS in the maintenance program since June 1970 and he currently serves as the Superintendent of Maintenance.

HARPER advised that about the fall of 1982 the NAPS Maintenance Department was requested by the Operations Department to evaluate and repair boric acid corrosion on the top surfaces of the ventilation ring ductwork in Unit 1 containment building. He stated he consulted with Construction Department Supervisor Robert BAULER and contract paint supervisor Marvin LANG, who suggested that the ductwork be painted to mitigate the effects of the boric acid. HARPER stated he informed BAULER that the ductwork was constructed of galvanized steel, whereupon BAULER told him that he still recommended painting the affected surfaces. He said that both BAULER and LANG were knowledgeable of North Anna Specifications (NAS) 1016 which governs all coating activities in a containment environment. HARPER advised that the recommendation to coat the ventilation ring ductwork in Unit 1 was first suggested by BAULER. He said he concurred with the recommendation because he assumed that BAULER was the Construction Department coating expert and was aware of all implications of NAS-1016. When asked why no safety evaluation was performed regarding the Unit 1 ventilation ring ductwork coating project he stated that, to his knowledge, a safety evaluation had never before been conducted on a coating project at the NAPS facility. He also stated that he was not cognizant of the safety implications regarding paint peeling when he concurred with BAULER's recommendation to coat the ventilation ring ductwork. HARPER advised that once the coating project was funded and approved by the maintenance department and referred to the construction department for implementation he was not further involved in the process. He advised that BAULER was also the responsible construction supervisor for the ventilation ring ductwork coating project performed in the Unit 2 containment building. HARPER said he was not involved in the unit 2 project, except to approve the work request and funding and to prepare necessary documentation.

This Results of Interview was prepared by Investigator Robert H. Burch on December 6 and 10, 1984.

  
Robert H. Burch, Investigator



RESULTS OF INTERVIEW WITH ALFRED QUINTON PARKER  
ON SEPTEMBER 13, 1984 AS PREPARED BY INVESTIGATOR  
ROBERT H. BURCH

On September 13, 1984 Alfred Quinton PARKER, Construction Supervisor, Engineering Projects Group, at Virginia Electric and Power Company's (VEPCO) North Anna Power Station (NAPS), was interviewed at the site by NRC Investigator Robert H. Burch. PARKER advised he resides at  
He said he has been employed by  
VEPCO at NAPS since April 1977.

PARKER said he is responsible for managing the capital budget on NAPS capital projects and serves as the interface between Engineering and Construction at the site. He said he recalled a conversation about the summer of 1982 with NAPS Construction Department officials Albert FRALEY, Johnny JONES, Bob BAULER and then Station Manager Bob CARTWRIGHT regarding a ventilation ring ductwork corrosion problem in the Unit 1 Containment Building. PARKER advised that during the discussion three alternatives were presented to mitigate boric acid corrosion on the top surfaces of the ventilation systems. He identified these alternatives as, (1) replacing the deteriorated surfaces of the ductwork, (2) reglazing these surfaces, or (3) coating the entire ductwork. He said BAULER suggested the coating alternative which was subsequently concurred with by others present. PARKER advised that the Engineering Projects Group relied upon the recommendation of the Construction Department (BAULER), assuming that they had researched applicable regulations and procedures in sufficient detail; that any required evaluations and/or safety implications had been identified and that the Quality Assurance Department had "blessed" this method of correcting the corrosion problem. PARKER advised he approved the "Request For Work" form initiated by Ronald STILES and forwarded it to the Construction Department with a fund accountability number (1499999160) and obligated funding for the Unit 1 ventilation ring ductwork coating project. A copy of the completed "Request For Work" form for the Unit 1 coating project provided by the NAPS Licensing Coordinator Stephen B. EISENHART was reviewed by PARKER during the interview. The "QA Approval" section of the form, containing the words "yes" and "no" reflects "no" was checked. PARKER advised that this section of the form notifies Quality Assurance (QA) they will be involved in the project when it commences. PARKER said that he checked "no" but that the form should have been checked "yes" since it was intended to be QA involvement in the project.

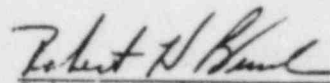
PARKER could not explain why he checked the "no" space of the form. PARKER then reviewed the "Request For Work" form, approving funds to coat the ventilation ring ductwork in Unit 2 (number 1499999240). He noted that the "yes" space was checked on this form, indicating that QA was notified of their involvement in this project. PARKER explained that regardless of whether these forms are checked "no" or "yes" the construction department is responsible for accomplishing the actual work in accordance with the requirements of coating procedures NAS-1016 (Construction) and QCI 11.1 (Quality Control). PARKER advised that he does not recall any discussions regarding the safety implications involved in coating the Units 1 and 2



ventilation ring ductwork but he said he did recall conversations pertaining to the completion of these projects during the scheduled outages of each unit.

PARKER opined that the problems associated with these projects are the result of Robert BAULER's failure to follow requirements of NAS-1016 and the apparent lack of emphasis regarding the importance of coating processes. PARKER also alluded to failure of the various NAPS departments, including Construction, Operations, Maintenance, Engineering and QA to adequately communicate, coordinate and interface with each other and the incorrect assumptions by each department that another department had performed all the required research, evaluation and analysis. He said that NAPS procedures in existence at that time were not sufficiently detailed and clear to identify responsibilities as they relate to the coating process. PARKER advised that, in his opinion, there were no willful intentions to violate procedures and/or to falsify records by any NAPS employee regarding the coating projects. He said that, to his knowledge, responsible VEPCO/NAPS officials were unaware of any coating problems regarding the ventilation ring ductwork in Units 1 and 2 until the NRC identified them in about July 1984.

This Results of Interview was prepared by NRC Investigator Robert H. Burch on January 11, 1985.



Robert H. Burch, Investigator

RESULTS OF INTERVIEW WITH MARTIN LUTHER BOWLING, JR.  
ON SEPTEMBER 12 AND OCTOBER 10, 1984 AS PREPARED BY  
INVESTIGATOR ROBERT H. BURCH

On September 12 and October 10, 1984, Martin Luther BOWLING, Jr., Assistant Plant Manager was interviewed in his office at the North Anna Power Station (NAPS) site by NRC Investigator Robert H. Burch. BOWLING advised that he resides at \_\_\_\_\_ He said he has been employed by Virginia Electric and Power Company (VEPCO) since June 1975 and advised he has been assigned in his present position at NAPS performing safety related and licensing duties since June 1984.

BOWLING advised that when the ventilation ring ductwork coating projects were performed in Units 1 and 2, he was an engineer in the Engineering and Construction Department at the VEPCO Corporate headquarters. He said he did not recall any participation in these projects when they were accomplished in December 1982 and April 1983, respectively. He advised he was not personally involved in the performance of either coating project; however, since about July 1984 when the NRC notified VEPCO of discrepancies regarding these activities he has attempted to determine the circumstances which caused these problems. BOWLING explained that maintenance requests from the NAPS Maintenance Department are initiated either by a Design Change Package (DCP) document or by a Maintenance Report (MR). He said the DCP is utilized when a request requires an engineering evaluation and the work to be accomplished is analyzed for health and/or safety implications. He said the MR is utilized for work of a non-safety related nature, although safety related processes and procedures are observed to accomplish the particular task. BOWLING advised that, basically, the difference between the two processes is the safety analysis performed when the DCP is utilized. He stated that the Maintenance Department is responsible for initiating either the DCP or the MR and that a determination of safety implications involved in a particular project is first made by management officials in this department.

BOWLING advised he was assigned to resolve the NRC concern that non-nuclear qualified coating materials were used to coat the ventilation ring ductwork in Units 1 and 2 and/or that a galvanized steel surface was improperly prepared and coated. He said he did not pursue procedural violations since it was already apparent that NAPS coating procedures NAS-1016 and QCI 11.1 had not been observed. BOWLING advised that VEPCO was primarily concerned with "fixing" the coating problems so that the units could return to service.

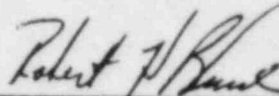
BOWLING advised that, to his knowledge, no VEPCO/NAPS management officials were aware that coating procedures had been violated until notified of this by the NRC in July 1984. He explained that NAPS would probably "still not be aware" of these ventilation ring ductwork coating discrepancies if the NRC had not brought these to the attention of VEPCO.

BOWLING advised that, based upon his inquiries, the two key NAPS personnel involved in the Units 1 and 2 ventilation ring ductwork coating projects are former Construction Superintendent John JONES and former Coating Supervisor Robert BAULER. He advised that his review of the Protective

Coating Surface Preparation Records (PCSPR), the Quality Control (QC) records, associated with these coating projects contain false and discrepant information. He said that BAULER was responsible for preparing these records and that a QC inspector is required to concur with data thereon through an independent verification. BOWLING advised that the principal items of incorrect data on the PCSPR's relate to the manner of surface preparation and the identity of primer coating utilized on the ventilation ring ductwork in Unit 1. BOWLING advised that VEPCO/NAPS has not initiated any actions to correct this false information contained in the PCSPR's because they (VEPCO officials) considered "fixing" the problem more significant than amending the records.

BOWLING concluded that he has not been made aware that any NAPS officials deliberately violated coatings procedures or that they falsified QC records. He opined that he does not believe any supervisor above Robert BAULER had knowledge that coating procedures were violated or that QC records contained false information.

This Results of Interview was prepared by NRC Investigator Robert H. Burch on December 17, 1984 and January 10, 1985.

  
Robert H. Burch, Investigator

STATEMENT

PLACE: \_\_\_\_\_

DATE/TIME: 10/3/84 - 1 30 PM

I, Henry L. Long, Jr., do hereby make the following voluntary statement to Robert H. Burch who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I do hereby make this voluntary statement without any threats having been made against me or any promises extended to me. *I reside at*

*I am President of Keelev and Long, Inc., Watertown CT, manufacturers of paints and coating materials for nuclear, utility and industrial facilities. Mr. Burch has asked me about telephone calls I might have received in late 1982 and/or mid 1983 from officials at VEPco's Nath Anna Power Station. Mr. Burch has explained that these calls were to inquire about the suitability of using Coating materials, both primer and top coat manufactured by competitors (Mobil and Dupont)*

in a reactor Containment environment and over a galvanized steel surface. Specifically, Mr. Burch explained that the calls from VEPCO in late 1982 and/or mid 1983 would have been from Construction Department personnel at the North Anna Power Station and the caller would have asked about using Mobil Chromax red primer No. 13-R-50 and Dupont Corlar Dual Build Epoxy ENAMEL over a galvanized steel surface (ventilation ring ductwork) inside of the Unit 1 Containment. Mr. Burch advised that the caller(s) may also have inquired about the use of Keeler and Long 6548 or 7107 primer and E-1 series top coat over a galvanized steel surface (vent ring ductwork) in the Containment of Unit 2. At the request of Mr. Burch I have inquired of my staff as to whether anyone at Keeler and Long received telephone call(s) from North Anna Power Station officials in late 1982 and mid 1983 regarding the Coatings of the ventilation ring ductwork in the Unit 1 + 2 Containment



building. I do not recall any telephone calls from North Anna Power Station officials in late 1982 and/or mid 1983 regarding the Coating of vent ring ductwork in Units 1 and 2 Containment. We have no records of any Contacts, either telephone or written, in our files indicating VEPCO inquired with Keeler and Long regarding these Coating Projects. No one on my staff recalls such a Contact(s) from VEPCO regarding this matter. If I or any staff member had received inquiries regarding a Competitors product we would not have commented on its suitability or qualifications since we do not have their specifications. If we had been asked about using a Keeler and Long product or products, either 6548 or 7107 and E-1 Series TopCoat, over a galvanized steel surface such as the vent ring ductwork in Containments 1 and members of my staff would have told the caller not to use them over a galvanized surface.

I have also talked with my Salaman in Colonial Heights, Virginia regarding Contacts with North Anna Power Station officials concerning the Coatings of Unit 1 and 2 vent ring ductwork. This Salaman, Mr. Norman E. Canfield recalls no contacts from anyone at North Anna pertaining to the Coating of the vent ring ductwork. I can say unequivocally that no one at Keeler and Long <sup>recall</sup> ~~had~~ <sup>HA</sup> contacts from VERCO North Anna officials <sup>in late 1982 or mid 1983</sup> <sup>HA</sup> who were seeking information regarding coating vent ring ductwork in Units 1 and 2 Containments. My daughter, Margaret H. Long BYRNES who is a technical representative with Keeler and Long, Inc. received 3 telephone calls from VERCO North Anna officials in July or August 1984. Each caller, all three being different individuals, asked my daughter if Keeler and Long 6548/7107 primer and E-1 Series topcoat was qualified for use in a Containment environment over a galvanized steel surface. She told VERCO

in each instance that these <sup>casting</sup> materials were not  
suitable for the use as described. We do not recall  
the names of all callers, only that of Ron Green.  
To the best of ~~our~~ <sup>my</sup> <sup>HLL</sup> knowledge and recollection these are  
the only 3 calls received from VERO regarding these  
products. I am certain that we would recall  
telephone calls from VERO asking us about competitors  
products if these calls had been made to <sup>me or</sup> <sup>HLL</sup> anyone  
on my staff. I am also certain if we had  
received these types of calls <sup>we</sup> <sup>HLL</sup> we would have  
told VERO <sup>either</sup> <sup>HLL</sup> that <sup>the products</sup> <sup>HLL</sup> were unsuitable for a  
galvanized surface or that we did not know about  
their suitability since we did not have their specifications.

I have read the foregoing statement consisting of 5 handwritten/~~typed~~ <sup>HLL</sup>  
pages. I have made and initialed any necessary corrections. I swear that the  
foregoing statement is true and correct. Signed on 10-3-84 at 3:33 PM

SIGNATURE:

NAME

Subscribed and sworn to before me this 3rd day of  
October 1984 at \_\_\_\_\_

INVESTIGATOR:

NAME

WITNESS:

NAME/TITLE

EXHIBIT 15

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RESULTS OF INTERVIEW WITH NORMAN RODERICK CANFIELD  
ON DECEMBER 10, 1984 AS PREPARED BY INVESTIGATOR  
ROBERT H. BURCH

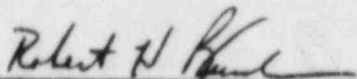
On December 10, 1984, Norman Roderick CANFIELD, Coatings Technician and Salesman, Keeler and Long, Inc., Watertown, CT 06795, was telephonically interviewed by NRC Investigator Robert H. Burch. CANFIELD advised that he lives at

He stated he is employed by Keeler and Long as a technical expert and salesman and he identified Virginia Electric and Power Company's (VEPCO) North Anna Power Station (NAPS), Mineral, VA as one of his current accounts.

CANFIELD advised that his sales contact at NAPS was a VEPCO employee named Robert BAULER. He said he has spoken with BAULER on numerous occasions regarding Keeler and Long products, providing him with both technical and service information. CANFIELD advised that he recalled a conversation with BAULER in late 1982 or early 1983 wherein BAULER solicited advice regarding exterior coating for a section of the turbine building, a galvanized steel structure. He said BAULER purchased a large quantity of Keeler and Long paint for this project, even though he (CANFIELD) recommended that the galvanized surface not be coated. CANFIELD advised that he has known from previous experiences that coating materials do not adhere well to galvanized surfaces no matter how they are prepared or the type of coating used.

CANFIELD advised that BAULER has never asked him for any advice or information concerning coating materials for the coating of ventilation ring ductwork in the Unit 1 or 2 containment buildings. He said he would have ascertained from BAULER the type of surface to be coated and upon learning it was constructed of galvanized steel inside of the containment building would not have recommended either a Keeler and Long product or one of another manufacturer. CANFIELD concluded unequivocally that neither BAULER nor any other person at the NAPS site ever sought advice or information from him regarding Keeler and Long coating materials or those of a competitor for use on the ventilation ring ductwork in the Units 1 or 2 containment buildings.

This Results of Interview was prepared by NRC Investigator Robert H. Burch on January 10, 1985.

  
Robert H. Burch, Investigator



RESULTS OF INTERVIEW WITH JAMES ALLEN SMITH ON  
OCTOBER 9, 1984 AS PREPARED BY INVESTIGATOR  
ROBERT H. BURCH

On October 9, 1984, James Allen SMITH, Quality Control (QC) Supervisor at Virginia Electric and Power Company's (VEPCO) North Anna Power Station (NAPS), Mineral, VA, was interviewed at the site by NRC Investigator Robert H. Burch. SMITH advised that he resides at

He said he has been employed by VEPCO at NAPS since June 1981 where he currently serves as the Quality Control Supervisor.

SMITH advised that he first learned of the Unit 1 ventilation ring ductwork coating project in about late November 1982 from NAPS QC Inspectors Bill HARRIS and Bill BURNS and from a Pittsburgh Testing Laboratory contractor inspector. He said these three individuals told him that a Maintenance Report (MR) and funding authorization had been issued to the Construction Department to accomplish this work. SMITH advised that there was a sense of urgency associated with the request since it was being accomplished during a scheduled outage. He said that, to the best of his recollection, some of this ventilation ring ductwork coating project had already been accomplished by the Construction Department when the QC Inspectors were notified of the work request. He said that the coating materials had already been selected; the mixing and batching process had been accomplished; the primer coating had been applied, and possibly some of the top coating had also been applied. He said that inadequate lines of communication between the Construction, Maintenance and Quality Assurance Departments is, in his opinion, the reasons the QC inspectors were not notified until the Unit 1 ventilation ring ductwork coating project had already commenced. SMITH said that this was a violation of existing coating procedures NAS-1016 and QCI 11.1. He also advised that he was not accepted or well liked by officials outside the QA Department and they were often not supportive of the QC program that he was attempting to initiate at NAPS.

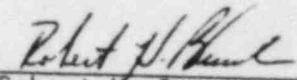
SMITH advised that he assigned both BURNS and HARRIS to inspect the ventilation ring ductwork coating project in both Units 1 and 2. He said he did not actively participate in these inspection programs and only became involved in any of the inspection activities if problems developed. SMITH stated he did not verify any of the inspection activities performed by BURNS and HARRIS on the Units 1 and 2 ventilation ductwork. He said he does not know if they conducted the inspection efforts which are noted by them on the Protective Coating Surface Preparation Records (PCSPR's). He advised that he did not learn of any problems, difficulties or discrepancies associated with these two projects until about August 1984 when NAPS employee Quinton PARKER informed him about the NRC discoveries. He said PARKER told him that an anonymous person had alleged that non-nuclear qualified coating materials were used on the ventilation ring ductwork in Units 1 and 2. SMITH advised that he told BURNS about his conversations with PARKER and then obtained and reviewed copies of the PCSPR's associated with the coating of the ventilation ring ductwork in Units 1 and 2. He said that he then recontacted BURNS with the PCSPR's and questioned him concerning his (BURNS') signatures on these documents. He said BURNS told him that his signatures and dates on the PCSPR's indicate he had verified



all entries thereon and that he had performed his inspections of the ventilation ring ductwork in accordance with applicable QC procedures. SMITH stated that he further reviewed the PCSPR's associated with the Units 1 and 2 ventilation ring ductwork coating projects and, based upon this review and his conversation with BURNS, noted no discrepancies or deficiencies in the documentation. He advised that the NAPS Site QA Manager, Andrew HOGG, appointed a team of QA personnel to review these PCSPR's along with existing coating procedures to determine whether the instructions were adequate for coating activities. He said that as a result of HOGG's efforts NAPS procedure QADI 10.13 was developed and implemented. He advised that he was not further involved in the Units 1 and 2 ventilation ring ductwork coating matter after about the middle of August 1984.

SMITH emphatically reiterated that both BURNS and HARRIS told him unequivocally they had performed inspection activities associated with the ventilation ring ductwork in Units 1 and 2 in accordance with existing coating procedures and that they had verified all information contained on the PCSPR's. He advised that it was subsequently determined that the primer coating used on the ventilation ring ductwork in Unit 1 was different from that shown on the PCSPR's. He said that this discrepancy casts some doubt upon the integrity of the inspectors and the PCSPR's. SMITH said that although BURNS and HARRIS denied they had violated coating procedures, evidence supports the fact that they failed to properly perform their inspection duties. SMITH concluded he is not personally aware that NAPS coating procedures and/or QC coating instructions were willfully and intentionally violated during Units 1 and 2 ventilation ring ductwork coating projects.

This Results of Interview was prepared by NRC Investigator Robert H. Burch on October 17, 1984 and December 17, 1984.

  
Robert H. Burch, Investigator

STATEMENT

PLACE: North Anna Power Station

DATE/TIME: 10-11-84/10:15

I, William Drayton Burns, Jr., do hereby make the following voluntary statement to Robert H. Burch who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I do hereby make this voluntary statement without any threats having been made against me or any promises extended to me. I reside at

I have worked at VEPCC's North Anna Power Station (NAPS) as a Quality Control (QC) Inspector since <sup>2/82</sup> ~~1982~~ <sup>WDR</sup>. Prior to this I worked with Pittsburgh Testing Lab at NAPS and I also worked with Daniel Construction Co. at the Surrey site. When I first went to work for VEPCC at NAPS, the QA program was fragmented and understaffed. There were two QA/QC groups at NAPS then; one in construction and one on the plant side (operations and Maintenance). Neither group cooperated with one another and there was a <sup>general WDR</sup> ~~dislike~~ of QC by the craft personnel. Painting or coating was <sup>and has always been WDR</sup> viewed as an insignificant <sup>mundane WDR</sup> and low priority activity <sup>at NAPS WDR</sup> for the most part. The request to perform painting activity was generally initiated on the plant side <sup>the WDR</sup> or maintenance <sup>department WDR</sup> by ~~documents~~ <sup>such WDR</sup> as the engineering work request <sup>(EWR) WDR</sup>. This is quite different from the Design Change Package, which is a structured and better organized document from the standpoint that acceptance criteria for inspections is spelled out <sup>in the package WDR</sup>. In the EWR inspection activities, there has to be a great deal of research and discussions <sup>by inspection personnel WDR</sup> to identify acceptance criteria. <sup>This WDR</sup> ~~has~~ has a tendency to create adverse feelings between the inspector and members of the craft <sup>who have performed WDR</sup> the work. I recall that the coating work on the vent ring ductwork in Unit 1 was initiated on

a Work Request and the actual coating began in December 1982. I was <sup>and have never been w52</sup> not the regular coatings inspector assigned to do coating inspections. My co-worker, Bill Harris was the regular inspector but due to limited resources and because Harris was busy on another project, I filled in for him some on the Unit 1 vent ring project <sup>and also in Unit 2. w52</sup>. I remember that when I was notified by <sup>my supervisor w52</sup> Jim Smith that I would be assisting with inspections on this project <sup>Communicated to me w52</sup> there was a sense of urgency, and <sup>w52</sup> pressure <sup>w52</sup> applied by maintenance management, to get the job done without delaying restart of the unit. I remember that I received the work request one day and was told that the job must be done immediately. When I reviewed the scope of work for the project, it was initially planned that only the inner ring and not the outside exhaust ring would be coated. <sup>This was being done to w52</sup> <sup>w52</sup> eliminate boric acid corrosion forming on the inner ring. As I recall, the job came forward on a <sup>Work note</sup> Request, and not a Design Change Package <sup>from Engineering. w52</sup>. This meant that there was no <sup>through from plant maintenance w52</sup> engineering evaluation of this project for safety implications and there was no evaluation for an actual design change. At the time I was assigned to inspect this <sup>Coating w52</sup> of the vent ring ductwork, <sup>w52</sup> I felt somewhat uncomfortable in that there was no <sup>meaningful w52</sup> engineering evaluation. Since the vent ring ductwork to be coated was inside a containment environment, I felt and believed there should be an engineering evaluation of this project. I felt so strongly about this that I first <sup>2 short time w52</sup> telephoned and <sup>w52</sup> later visited the plant engineering office to discuss my concern with an engineer. The phone call and <sup>subsequent w52</sup> meeting with an engineer <sup>(name not recalled) w52</sup> took place just before the actual coating work on Unit 1 vent ring ductwork began. I recall the time as about during the third week of 12/82 but prior to the work beginning. I have tried to remember which engineer I talked with but I have not been able to do so. I just do not remember who <sup>with w52</sup> I discussed <sup>this concern. w52</sup> During the discussion I specifically recall that I expressed <sup>the w52</sup> concern to <sup>this VEPLO w52</sup> an engineer that coating

was going to take place in a containment without any engineering evaluation and that I believed as an inspector <sup>W572</sup> [redacted] the work should be accomplished under a Design Change Package where acceptance criteria <sup>is W572</sup> [redacted] spelled out. I had, at this time, already done some research regarding the project and knew some of the specific requirements as spelled out in coating procedures which were effective at the time. Two of these procedures/<sup>with</sup> which I am very familiar are NAS 1016, "Coating in Containment" and QCI 11.1 "Coating Inspections". I had researched these procedures and was aware during my meeting with the engineer in 12/82 that an SP #10 type of surface was required by NAS 1016 before the vent ring ductwork could be properly coated. The SP #10 surface is achieved by near white sandblasting which is prohibited in a containment environment. Also during my conversation with the engineer, I <sup>further W572</sup> expressed <sup>steel</sup> concern that a coating material was being placed over a galvanized/surface, which is the type of metal the vent ring ductwork is made of. I recall that, after expressing these concerns to the engineer he told me that maintenance work for the NAPS did not follow the requirements of <sup>the W572</sup> NAS 1016 specifications and therefore the SP #10 surface was not required. The engineer also told me that the station (maintenance) wanted the work done before the hatch was closed for restart. I also remember the engineer telling me that the station only wanted the coating on the Unit 1 vent ring ductwork to last until the next outage and then the entire system would be repalced. With this information from Engineering I did not discuss the issue further. I am familiar with the Protective Coating Surface Preparation Record, which is described in the <sup>inspection W572</sup> procedure QCI 11.1. This document is the QC form which controls the coating process from selection, mixing, batching, etc., through surface preparation and on to final inspection of the <sup>primer+topcoat. W572</sup> completed [redacted]. Although this is a QC form it is not <sup>Completed or W572</sup> filled <sup>in</sup> [redacted] by QC nor is a copy maintained by QC, even though



the QC inspector is required to sign <sup>at several different locations on wsr</sup> the form. The QC signatures <sup>on</sup> the form certifies that the inspector has verified all of the data entered by <sup>Robert BAULER, wsr Supervisor, wsr</sup> the Construction <sup>in wsr</sup> [redacted]. The Protective Coating Surface preparation records that I have signed regarding the coatings of the vent ring ductwork in Units 1 and 2 in December 1982 and April 1983 were filled <sup>in wsr</sup> and prepared by Robert Bauler, who was the NAPS Construction Department Coating Supervisor at those times. The Protective Coating records that I signed for these 2 projects are identified as <sup>(report numbers 001 and 002) wsr</sup> 1PC-1P and 1PC-2P <sup>(report numbers 012, 013, 014, 015, 011) wsr</sup> (Unit 1 vent ring, primer coat) and 2PC-2P and F, 2PC-3F and 2PC-4P and F <sup>(Unit 2 vent ring, primer and finish coats).</sup>

A copy of these Protective Coatings records are attached to and are a part of my statement. I <sup>reiterate wsr</sup> that my signature on <sup>wsr</sup> these forms is, according to <sup>NAPS plant procedures</sup> QCI 11.1 and NAS 1016, a certification that I <sup>did wsr</sup> inspect <sup>activities and/or processes wsr</sup> the items <sup>wsr</sup> listed on the forms and found them to be in the condition or to have been performed in the manner indicated. I have reviewed these <sup>wsr</sup> completed forms <sup>with and in the presence of Mr. Burch. wsr</sup> either <sup>I voluntarily wsr</sup> [redacted] state that I <sup>wsr</sup> did not inspect <sup>all wsr</sup> items as indicated <sup>wsr</sup> [redacted] or was aware at the time I signed the records that certain functions had not been performed as indicated. I <sup>wsr</sup> will identify those items which I know to be in error on the forms and explain why they are not correct, even though I signed the forms indicating that the information <sup>wsr</sup> therein was verified by me. Regarding <sup>(reports 001 + 002), wsr</sup> protective coating records 1PC-1P and 1PC-2P <sup>(reports 001 + 002), wsr</sup> the vent ring ductwork was not prepared to an SP#10 surface as indicated. In order to achieve this type of surface, a near white sandblasting is required and this activity is prohibited in a containment. The method of surface preparation is indicated as "grinder" and a grinder was not used, except possibly on a trial basis or to remove excessive deposits of corrosion. If a grinder was used to prep the surface as indicated, there <sup>f</sup>would have been the <sup>f</sup>risk of grinding



through the galvanized surface, plus danger of spreading contamination. As I have stated, grinding was not used to prepare the surfaces of the vent ring ductwork; only sandpaper or wire brushing was used. At the time I signed these forms I knew that <sup>an SP #10 was</sup> [redacted] surface had not and would not be obtained because I had already discussed this with an engineer. I do not know why I signed the protective coating records indicating an SP #10 surface by grinding was achieved. Bauler placed this information on the forms and I signed, <sup>was</sup> [redacted] concurring with him. <sup>I knew was</sup> [redacted] that this was not correct. I would like to say that I either did not see this entry or that it was not there when I signed the forms but this I cannot say. I simply do not have a <sup>was</sup> [redacted] reasonable explanation for my actions. The entry under "Final Cleaning", indicating a "vacuum" cleaner was used is incorrect. As I recall there was a vacuum cleaner in containment on this occasion but I never saw this equipment used to clean the vent <sup>ring was</sup> ductwork. I did not verify that this was done and I do not think it was done as indicated, even though Bauler checked that it was used. The data regarding temperatures, humidity and dew point were recorded by Bauler who took these readings. In some instances I verified his readings by taking <sup>readings was</sup> [redacted] of my own but in <sup>most was</sup> [redacted] instances I used the data he obtained and signed that I had verified his readings. Although I did verify some of his readings, <sup>also was</sup> I took his word for some of them by just signing the form indicating I had personally verified the data. With regard to the Dry Film Thickness (DFT) measurements, I did not perform these functions as required by NAS 1016. This procedure requires a measurement every 20 square feet and I did not do this, even though my signature indicates I followed NAS 1016. I did take random samples over the area about once daily but not according to the procedure. One reason I did not follow procedures is because of the previous conversation <sup>I reported in which was</sup> [redacted] <sup>was</sup> an engineer [redacted] told me that I did not have

to ~~was~~ ductwork ~~was~~  
inspect/coating strictly according to ~~was~~ NAS 1016. Also,  
I recall that when I first came to WAPS as an inspector, I asked if  
coating inspectors were supposed to witness the mixing, batching and  
preparation of coating materials and I was told by Murrell Burns,  
~~Pittsburg TESTING LAB (PTL) was~~  
no relation, and no longer ~~was~~ VAPCO ~~was~~ (WAPS) that we did not have to  
do so. Even though the ~~was~~ protective ~~was~~ for Unit  
1 contain my signature indicating I participated in and verified the  
Coating records (reports 001 + 002)  
selection, mixing, batching, etc. ~~was~~ of the coating materials, I did not do so.  
I took the word ~~was~~ of Bob Bauler ~~was~~ that all of this data was correct  
and I signed ~~the forms was~~ as if I had verified this ~~information was~~ to be correct. It was definite-  
ly a mistake on my part to do this and I cannot explain my actions,  
except to say that ~~the was~~ activities are ~~was~~ generally regarded as a very mundane,  
ordinary, low profile type activity and little or no significance is  
attached to the importance of this function. As to the type of primer  
used in Unit 1 on the vent ring ductwork, all I can say is that it  
was a red primer. I do not know the manufacturer of the coating nor  
the identification of the primer coating. With regard to the Unit 2  
Protective Coating records containing my signatures, these forms are  
labelled 2PC-2P and F, 2PC-3F and 2PC-4P and F ~~(reports 011-015) was~~ (Unit 2 primer and/or  
finish coating records). The forms indicate for the primer coating  
that vacuum blasting was used to achieve an SP#10 surface. Bob Bauler  
wrote this information on the forms and I signed them indicating I had  
verified this method of surface preparation and ~~that was~~ this type of surface was  
achieved. This is incorrect data since an SP#10 surface was not achieved  
and vacuum blasting was not used. Also certain items of data appearing  
elsewhere on these records was not verified by ~~me was~~ in all  
instances. This information includes temperatures, humidity, dry film  
thickness, selection and preparation of materials, etc. Although I did  
perform some inspections, I also used data compiled by Construction

Supervisor Bob Bauler and signed the forms indicating I had verified and/or independently obtained this data. Again, I cannot explain my actions except to state that <sup>the work activities were have</sup> coating at NAPS <sup>work have</sup> always been regarded as very low priority work and <sup>work have</sup> never been given the full attention and importance it should be given. I acknowledge that when I did verify Bauler's data or conduct inspections of the Unit 1 and 2 vent ring duct work, I did not conduct the indepth and detailed inspections that I knew <sup>work</sup> should have <sup>work</sup> done. Bob Bauler was aware of <sup>my laxity work</sup> and took advantage of it. I knew better as a professional inspector, yet I allowed it to happen on these two projects. I now recognize this <sup>work</sup> collaboration with Construction as a violation of 10 CFR Part 50, Appendix B, since I did not perform these inspections in an independent manner. I first realized the seriousness of my actions regarding false and inaccurate data on the protective coating records associated with Units 1 and 2 vent ring ductwork about <sup>the work July</sup> late <sup>work</sup> or early August 1984 timeframe. It was about this time that VEPCO (NAPS) began looking into circumstances involving the Units 1 and 2 <sup>work</sup> vent ring coating. I discussed with my supervisor Jim Smith my concerns about the <sup>inaccurate and false work</sup> data in the protective coating records. <sup>work</sup>

<sup>work</sup> I also discussed this concern with the site QA Manager, Andy Hogg in August 1984. I recall on one occasion before discussing this <sup>concern work</sup> with Hogg that he, <sup>work</sup> Jim Smith and me were in a discussion with the NRC resident inspectors about August 21, 1984. On this occasion Hogg defended me and my inspections of the Unit 1 and 2 vent ring coating projects. Hogg told the NRC that if my signature appeared on a QC form then he was satisfied that I had done the inspection as indicated. On this occasion I wanted to say, "Mr. Hogg, I'm sorry but I did not do the inspections <sup>generally work</sup> as indicated by my signature" but I did not want to embarrass him in the presence of the NRC. Later on after this conversation with the NRC, I told Hogg <sup>generally work</sup> what I have stated in this





W52

specification process on the vent ring ductwork as seriously as I do <sup>W52</sup> the other disciplines. I cannot explain why I allowed myself to be manipulated by Bauler or why I basically took his word that all data on the forms was correct. Possibly, due to pressure put on the craft and to some extent on me to complete the <sup>Coating work</sup> jobs, I took short cuts for the sake of saving time. I acknowledge that I violated not only plant procedures QCI 11.1 and NAS 1016 which govern coating activities, but also 10 CFR Part 50 Appendix B, by not maintaining an <sup>W52</sup> inspection process independent of the construction effort. W52

W52

W52

W52

W52



I would like to re-emphasize that, to the best of my knowledge, at no time has any supervisor or co-worker made any effort to cover up any wrong doing on my part which has been set forth in this statement. I would like to say that the NAPS QC Department does not do their inspections in the manner in which the coating inspections on the vent ring duct work was performed. We have restructured our organization in such a manner that this situation would never occur again due to internal checks and balances. We also have better interface with other departments which did not exist at the time of the coating projects. WBT

~~WBT~~ ~~WBT~~ ~~WBT~~ ~~WBT~~

I have read the foregoing statement consisting of 10 ~~handwritten~~<sup>WBT</sup>/typed pages. I have made and initialed any necessary corrections. I swear that the foregoing statement is true and correct. Signed on 4 December 84 at 12:49 P.M.

SIGNATURE:

NAME

W. D. Burns Jr.

Subscribed and sworn to before me this 4<sup>th</sup> day of

DECEMBER

1984 at

NAPS, Mineral, VA.

INVESTIGATOR:

NAME

Robert N. Band

WITNESS:

NAME/TITLE

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EXHIBIT 18 -

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PROJECT: NAPS APPLICATOR'S SUPV R. BAULER J. O. NO. 12050

REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER	<input checked="" type="checkbox"/> SUBSTRATE <input checked="" type="checkbox"/> STEEL <input checked="" type="checkbox"/> MASONRY <input checked="" type="checkbox"/> CONCRETE ANCHOR PATTERN: OBTAINED: <u>1.5</u> SPECIFIED: <u>1.5-2.5</u>
DATE: <u>12-22-82</u>							
REPORT NUMBER: <u>001</u>							
SHIFT: <u>1ST</u>							
SURFACE TO BE OBTAINED: <u>SP#10</u>							
SURFACE PREPARATION	SAT	UNS.	SAT	UNS.	SAT	UNS.	
METHOD OF SURFACE PREP: <u>GRINDER</u>							
WERE WATER AND OIL FILTERS USED? YES <u>NO</u> <u>N/A</u>							GROUT FINISH: <u>N/A</u>
WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES <u>NO</u> <u>N/A</u>							SANDPAPER TEXTURE: <u>M</u>
WERE THE FOLLOWING USED? - FORM RELEASE AGENTS: <u>NO</u> TYPE: <u>N/A</u>							FINAL CLEANING: <input checked="" type="checkbox"/> DUSTED <input checked="" type="checkbox"/> VACUUM
CURING / HANDLING COMPOUNDS: <u>NO</u> TYPE: <u>N/A</u>							

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>R. Bauler</u>						
QC INSPECTOR <u>W. P. B...</u>						

LOCATION AND REMARKS: RC #1 ELEV 216 PAINTING VENT  
DUCT FROM FAN IHUF-1B-130000 TO COILING COILS  
1HU-E-2B-DOWN VENT DUCT 30' NORTH  
SLING - 7503-EXP. 4-1-83 - DFT-7431-EXP. 3-21-83 ST-7559-EXP. 4-1-83

DATE: <u>12-22-82</u>	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
AMBIENT TEMP: <u>81</u>						
SURFACE TEMP: <u>80</u>						
DEW POINT: <u>58</u>						
REL. HUMIDITY: <u>42%</u>						
DATE: <u>12-23-82</u>						
FILM THICKNESS READINGS:	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED: <u>2 MIN 3 MAX</u>	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
SPECIFIED: <u>3 MIN 10 MAX</u>	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
PAINT BATCH NUMBERS ACT:	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>20-59732</u>	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
<u>4-1-83</u>	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
REDUCER USED	APG*	APG*	APG*	APG*	APG*	APG*
<u>10% 3819</u>						
COATING APPLIED <u>MOBIL CHROMAX PRIMER</u>	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE
<u>REDTTS-A-30</u>						
COATING EQUIP:	<input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
APPLICATORS QUALIFIED	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
PAINT CONTRACT SUPV. <u>R. Bauler</u>						
CONSTR. SUPV. <u>R. Bauler</u>						
Q. C. INSP. <u>W. P. B...</u>						

EXHIBIT 18  
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\*AMOUNT PER GALLON B/BRUSH S/SPRAY R/ROLL

PROJECT: NAPS

APPLICATOR'S SUPV

R. BAULERJ. O. NO. 12030

REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER	<input checked="" type="checkbox"/> SUBSTRATE <input checked="" type="checkbox"/> STEEL <input checked="" type="checkbox"/> MASONRY <input checked="" type="checkbox"/> CONCRETE ANCHOR PATTERN: OBTAINED: <u>1.0</u> SPECIFIED: <u>1.0-2.5</u> GROUT FINISH: <u>N/A</u> SANDPAPER TEXTURE: <u>N/A</u> FINAL CLEANING: <input checked="" type="checkbox"/> DUSTED <input checked="" type="checkbox"/> VACUUM
DATE:	<u>12-28-82</u>						
REPORT NUMBER:	<u>002</u>						
SHIFT:	<u>1ST</u>						
SURFACE TO BE OBTAINED	<u>SP#10</u>						
SURFACE PREPARATION	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	
METHOD OF SURFACE PREP:	<u>GRIND</u>						
WERE WATER AND OIL FILTERS USED? YES <u>NO</u> <u>N/A</u>							
WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES <u>NO</u> <u>N/A</u>							
WERE THE FOLLOWING USED? FORM RELEASE AGENTS: <u>N/A</u> TYPE: <u>N/A</u>							
CURING / HANDLING COMPOUNDS: <u>N/A</u> TYPE: <u>N/A</u>							

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>R. Bauler</u>						
QC INSPECTOR	<u>W. Bauler</u>					

LOCATION AND REMARKS: RC#1 Elev. 216' PAINTING VENT DUCT  
NORTH FROM REPORT 001 DOWN TO 1HU-E-2A

ST-7559-EXP. 4-1-83 DFT-7431-3-21-83 SLING-7507-EXP. 4-1-83

DATE:	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>12-28-82</u>						
AMBIENT TEMP.	<u>77'</u>					
SURFACE TEMP.	<u>75'</u>					
DEW POINT:	<u>50'</u>					
REL. HUMIDITY:	<u>41%</u>					
DATE:	<u>12-27-82</u>					
FILM THICKNESS READINGS:	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED:	<u>3ND. 3.5</u>	<u>N/A</u>	<u>MIN. MAX.</u>	<u>MIN. MAX.</u>	<u>MIN. MAX.</u>	<u>MIN. MAX.</u>
SPECIFIED:	<u>3ND. MAX</u>	<u>N/A</u>	<u>MIN. MAX.</u>	<u>MIN. MAX.</u>	<u>MIN. MAX.</u>	<u>MIN. MAX.</u>
PAINT: BATCH NUMBERS ACT:	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
	<u>20-5732</u>					
	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
	<u>4-1-83</u>					
REDUCER USED	APG*	APG*	APG*	APG*	APG*	APG*
	<u>10% 4093</u>					
COATING APPLIED	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE
	<u>20-5732</u>					
COATING EQUIP.	<input checked="" type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
APPLICATORS QUALIFIED	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
PAINT CONTRACT SUPV.	<u>R. Bauler</u>					
CONSTR. SUPV.	<u>R. Bauler</u>					
Q. C. INSP.	<u>10.1</u>					

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PROJECT: NAPS APPLICATOR'S SUPV. R. BAULER J.O. NO. 12030

REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER	<input checked="" type="checkbox"/> SUBSTRATE <input checked="" type="checkbox"/> STEEL <input checked="" type="checkbox"/> MASONRY <input checked="" type="checkbox"/> CONCRETE ANCHOR PATTERN:
DATE: <u>12-30-82</u>							
REPORT NUMBER: <u>003</u>							
SHIFT: <u>1st</u>							
SURFACE TO BE OBTAINED: <u>SP#10</u>							
SURFACE PREPARATION	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	OBTAINED: <u>1.0</u>
METHOD OF SURFACE PREP: <u>Grinder</u>							SPECIFIED: <u>1.0-2.5</u>

WERE WATER AND OIL FILTERS USED? YES NA NO NA

WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES NA NO NA

WERE THE FOLLOWING USED? FORM RELEASE AGENTS: NA TYPE: NA

CURING / HANDLING COMPOUNDS: NA TYPE: NA ☒ DUSTED ☒ VACUUM

GROUT FINISH: NA

SANDPAPER TEXTURE: ME

FINAL CLEANING: NA

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>R. Baule</u>						
QC INSPECTOR: <u>W. L. G. H. A. I. S.</u>						

LOCATION AND REMARKS: RC #1 ELEV. 216' PAINTING VENT DUCT  
NORTH FROM REPORT 002 DOWN TO FAN 1-HU-F-1A-130

DATE	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>12-30-82</u>						
AMBIENT TEMP. <u>77°</u>						
SURFACE TEMP. <u>62°</u>						
DEW POINT: <u>48°</u>						
REL. HUMIDITY: <u>39%</u>						
DATE: <u>1-3-83</u>						
FILM THICKNESS READINGS: <u>1</u>	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED: <u>90.8 AS</u>		N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
SPECIFIED: <u>1.0-2.5</u>		N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
<u>1-81520H</u>	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
PAINT BATCH NUMBERS	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
ACT: <u>20-5977L</u>	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
<u>4-1-83</u>						
REDUCER USED	APG*	APG*	APG*	APG*	APG*	APG*
<u>10% 4093</u>						
COATING APPLIED	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE
<u>RED 15-R-50</u>						
COATING EQUIP.	<input checked="" type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
APPLICATORS QUALIFIED	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
PAINT CONTRACT SUPV.	<u>R. Baule</u>					
CONSTR. SUPV.	<u>R. Baule</u>					
Q. C. INSP.						

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## 7R.01B PROTECTIVE COATING SURFACE PREPARATION RECORD

PROJECT: NARS APPLICATOR'S SUPV R. BAULER J.O. NO. 12050

REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER	<input checked="" type="checkbox"/> SUBSTRATE <input checked="" type="checkbox"/> STEEL <input checked="" type="checkbox"/> MASONRY <input checked="" type="checkbox"/> CONCRETE ANCHOR PATTERN:
DATE: <u>1-3-83</u>							
REPORT NUMBER: <u>004</u>							
SHIFT: <u>1st</u>							
SURFACE TO BE OBTAINED: <u>SP-10</u>							
SURFACE PREPARATION	SAT. <input checked="" type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	OBTAINED: <u>1.0</u>
METHOD OF SURFACE PREP: <u>GRINDER</u>							SPECIFIED: <u>1.0-2.5</u>

WERE WATER AND OIL FILTERS USED? YES MA NO MAWERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES MA NO MAWERE THE FOLLOWING USED? FORM RELEASE AGENTS: MA TYPE: MACURING / HANDLING COMPOUNDS: MA TYPE: MAGROUT FINISH: MASANDPAPER TEXTURE: MAFINAL CLEANING: MA☒ DUSTED ☒ VACU

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>R. Bauler</u>						
QC INSPECTOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>M. H. H. H.</u>						

LOCATION AND REMARKS:

RE-4 ELU 216 PAINTING Vent DUCT  
NORTH FROM REPORT 003 DOWN TO 1-HUE 2C  
ST-7559-EXP-4-1-83 DFT-7431-EXP-3-21-83 SLING-7503-4

DATE	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>1-3-83</u>						
AMBIENT TEMP	<u>76</u>					
SURFACE TEMP	<u>61.5</u>					
DEW POINT	<u>49</u>					
REL. HUMIDITY	<u>39%</u>					
DATE	<u>1-3-82</u>					
FILM THICKNESS READINGS	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED	<u>3.18 MAX</u>	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
SPECIFIED	<u>3.18 MAX</u>	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
PAINT BATCH NUMBERS	<u>20-5977L</u>					
ACT	<u>427-83</u>					
REDUCER USED	APG* <u>10% 4093</u>	APG*	APG*	APG*	APG*	APG*
COATING APPLIED	COLOR CODE <u>Red 11-8-80</u>	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE
COATING EQUIP	<input checked="" type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
APPLICATORS QUALIFIED	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
PAINT CONTRACT SUPV	<u>R. Bauler</u>					
CONSTR. SUPV	<u>R. Bauler</u>					
Q.C. INSP	<u>113 5/10 5.10</u>					
AMOUNT PER GALLON B/BRUSH S/SPRAY R/ROLL EXHIBIT <u>18</u> Page <u>14</u> of <u>24</u> Pages						



REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER
DATE:	<u>1-6-82</u>					
REPORT NUMBER:	<u>005</u>					
SHIFT:	<u>1st</u>					
SURFACE TO BE OBTAINED	<u>SP#10</u>					
SURFACE PREPARATION	SAT. <input checked="" type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>
METHOD OF SURFACE PREP:	<u>GRINDER</u>					

ANCHOR PATTERN: 1.0  
 OBTAINED: 1.0  
 SPECIFIED: 1.0-2

WERE WATER AND OIL FILTERS USED? YES 4A NO 4A  
 WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES 4A NO 4A  
 WERE THE FOLLOWING USED? FORM RELEASE AGENTS: N/A TYPE: 4A  
 CURING / HANDLING COMPOUNDS: 4A TYPE: 4A

GROUT FINISH: 4A  
 SANDPAPER TEXTURE: 4A  
 FINAL CLEANING: ☒ DUSTED ☒ VACU

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>R. Bauler</u>						
QC INSPECTOR	<u>W. J. Harris</u>					

LOCATION AND REMARKS: RE#1 ELEU. 216 PAINTING RING DUCT FROM 2200 BEAM TO EL231-6' BEAM OUTER RING, PAINTING FROM 1-HUE 2C FAN NORTH TO REPORT 001  
ST-7559 EXP. 4-1-83 DFT-7431-EXP. 3-21-83 SLING-7503-EXP. 4-1-83

DATE:	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>1-6-83</u>						
AMBIENT TEMP.	<u>78'</u>					
SURFACE TEMP.	<u>102'</u>					
DEW POINT:	<u>48'</u>					
REL. HUMIDITY:	<u>41%</u>					
DATE:	<u>1-7-82</u>					
FILM THICKNESS READINGS:	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED:	MIN. MAX.	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
SPECIFIED:	<u>3MIN. 5MAX.</u>	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
PAINT BATCH NUMBERS	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
ACT:	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
<u>20-5973L</u>	<u>4-1-83</u>					
REDUCER USED	APG*	APG*	APG*	APG*	APG*	APG*
<u>10% 4093</u>						
COATING APPLIED	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE
<u>RED-13-R-50</u>						
COATING EQUIP.	<input checked="" type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
APPLICATORS QUALIFIED	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
PAINT CONTRACT SUPV.	<u>R. Bauler</u>					
CONSTR. SUPV.	<u>R. Bauler</u>					
Q. C. INSP.	<u>W. J. Harris</u>					

PROJECT: NAPS APPLICATOR'S SUPV R. BAULER J. O. NO. 12050

REASON FOR PREPARATION	GENERAL PRIMING		SEAL COAT		FIRST FINISH		FINISH COAT		TOUCH UP BUILD UP		OTHER		<input checked="" type="checkbox"/> SUBSTRATE <input type="checkbox"/> STEEL <input type="checkbox"/> MASONRY <input type="checkbox"/> CONCRETE ANCHOR PATTERN:
DATE:	<u>1-11-83</u>				<u>1-10-83</u>								
REPORT NUMBER:					<u>006</u>								
SHIFT:					<u>1ST</u>								
SURFACE TO BE OBTAINED					<u>Clean</u>								
SURFACE PREPARATION	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	OBTAINED: <u>1.5</u>
METHOD OF SURFACE PREP:					<u>DUST</u>								SPECIFIED: <u>1.5.2.5</u>
WERE WATER AND OIL FILTERS USED? YES <u>NO</u> <u>N/A</u>													GROUT FINISH: <u>N/A</u>
WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES <u>NO</u> <u>N/A</u>													SANDPAPER TEXTURE: <u>N/A</u>
WERE THE FOLLOWING USED? FORM RELEASE AGENTS: <u>N/A</u> TYPE: <u>N/A</u>													FINAL CLEANING:
CURING / HANDLING COMPOUNDS: <u>N/A</u> TYPE: <u>N/A</u>													<input type="checkbox"/> DUSTED <input type="checkbox"/> VACUUM

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
QC INSPECTOR				<u>R. Bauler</u>		

LOCATION AND REMARKS:

RC #1 ELEV 216' - Painting VENT DUCT  
 From Fan 1 HVF-1B-130000 TO Coiling Coils  
 1HV-E-2B-Down VENT DUCT 30' NORTH  
 Sling 7503 - Exp 4-1-83 DET 7431-Exp 3-31-83 ST 7539 Exp 4-1-83

DATE:	GEN. PRIMING		SEAL COAT		1ST FINISH		FINISH COAT		TOUCH UP		OTHER	
AMBIENT TEMP.							<u>1-10-83</u>					
SURFACE TEMP.							<u>80°</u>					
DEW POINT:							<u>80°</u>					
REL. HUMIDITY:							<u>58°</u>					
DATE:							<u>44%</u>					
FILM THICKNESS READINGS:			<u>N/A</u>				<u>1-13-83</u>					
OBTAINED:	DFTs	WFTs	DFTs	WFTs	DFTs	WFTs	DFTs	WFTs	DFTs	WFTs	DFTs	WFTs
SPECIFIED:	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
PAINT: BATCH NUMBERS, ACT:	GEN. PRIMING		SEAL COAT		1ST FINISH		FINISH COAT		TOUCH UP		OTHER	
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE	
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE	
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE	
REDUCER USED	APG*		APG*		APG*		APG*		APG*		APG*	
COATING APPLIED	COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE	
COATING EQUIP.	B S		B S		B S		B S		B S		B S	
TRIAL MIST DEMONSTRATION	YES NO		YES NO		YES NO		YES NO		YES NO		YES NO	
APPLICATORS QUALIFIED	YES NO		YES NO		YES NO		YES NO		YES NO		YES NO	
PAINT CONTRACT SUPV.												
CONSTR. SUPV.												
Q. C. INSP.												

\*AMOUNT PER GALLON

B/BRUSH

S/SPRAY

R/ROLL

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PROJECT: NAPSAPPLICATOR'S SUPV R. BaulerJ. O. NO. 12050

REASON FOR PREPARATION	GENERAL PRIMING		SEAL COAT		FIRST FINISH		FINISH COAT		TOUCH UP BUILD UP		OTHER		<input checked="" type="checkbox"/> SUBSTRATE <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> MASONRY <input checked="" type="checkbox"/> CONCRETE ANCHOR PATTERN:
DATE:								1-14-83					
REPORT NUMBER:								007					
SHIFT:								1st					
SURFACE TO BE OBTAINED								1/16 in.					
SURFACE PREPARATION	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	OBTAINED: <u>1.5</u>
METHOD OF SURFACE PREP:								Post					
WERE WATER AND OIL FILTERS USED? YES <u>NO</u> <u>N/A</u>													GROUT FINISH: <u>N/A</u>
WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES <u>NO</u> <u>N/A</u>													SANDPAPER TEXTURE: <u>60</u>
WERE THE FOLLOWING USED? FORM RELEASE AGENTS: <u>NO</u> TYPE: <u>N/A</u>													FINAL CLEANING: <u>NO</u>
CURING / HANDLING COMPOUNDS: <u>NO</u> TYPE: <u>N/A</u>													<input checked="" type="checkbox"/> DUSTED <input type="checkbox"/> VACUUM

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
QC INSPECTOR				<u>R. Bauler</u>		
LOCATION AND REMARKS:				<u>(1) Bauler</u>		

RC #1 ELEV 216 Painting VENT DUCT  
 North From Report 001 Down To 1HV-E-2A  
 ST-7559 EXP 4-1-83 DET. 7431-3-21-83 Sling 7503 EXP 4-1-83

DATE:	GEN. PRIMING		SEAL COAT		1ST FINISH		FINISH COAT		TOUCH UP		OTHER		
AMBIENT TEMP.								1-14-83					
SURFACE TEMP.								79°					
DEW POINT:								80°					
REL. HUMIDITY:								57°					
DATE:								450%					
FILM THICKNESS READINGS:	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input checked="" type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs
OBTAINED:	MIN.	MAX.	N/A	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
SPECIFIED:	MIN.	MAX.	N/A	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
PAINT: BATCH NUMBERS ACT:	GEN. PRIMING		SEAL COAT		1ST FINISH		FINISH COAT		TOUCH UP		OTHER		
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		
REDUCER USED	APG*		APG*		APG*		APG*		APG*		APG*		
COATING APPLIED	COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		
COATING EQUIP.	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	
APPLICATORS QUALIFIED	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	
PAINT CONTRACT SUPV.													
CONSTR. SUPV.													
Q. C. INSP.													

\*AMOUNT PER GALLON

B/BRUSH

S/SPRAY

R/ROLL

 EXHIBIT 18  
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PROJECT: DAPSAPPLICATOR'S SUPV R BaulerJ.O. NO. 12050

REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER	<input checked="" type="checkbox"/> SUBSTRATE <input type="checkbox"/> STEEL <input checked="" type="checkbox"/> MASONRY <input checked="" type="checkbox"/> CONCRETE ANCHOR PATTERN:
DATE:				1-17-83			
REPORT NUMBER:				008			
SHIFT:				1st			
SURFACE TO BE OBTAINED				flame			
SURFACE PREPARATION	SAT. UNS.	SAT. UNS.	SAT. UNS.	SAT. UNS.	SAT. UNS.	SAT. UNS.	OBTAINED: <u>1.2</u>
METHOD OF SURFACE PREP:				Dust			SPECIFIED: <u>1.0-2.5</u>

WERE WATER AND OIL FILTERS USED? YES N/A NO N/AGROUT FINISH: N/AWERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES N/A NO N/ASANDPAPER TEXTURE: med

WERE THE FOLLOWING USED?

FORM RELEASE AGENTS: N/A TYPE: N/A

FINAL CLEANING:

CURING / HANDLING COMPOUNDS: N/A TYPE: N/A☐ DUSTED ☒ VACUUM

	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
PAINTING SUPERVISOR				R Bauler		
QC INSPECTOR				W. J. Harner		

LOCATION AND REMARKS: RC#1 ELEV. 216 Painting Ring Duct From  
2200 Beam To EL 231-6 Beam Outer Ring, Painting  
From 1-HUE2C Fan North To Report 001.  
ST 7559 Exp 4-1-83 DFT 7431 Exp 3-21-83 Sling 7503 Exp 4-1-83

	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
DATE:				1-17-83		
AMBIENT TEMP.				80°		
SURFACE TEMP.				80°		
DEW POINT:				55°		
REL. HUMIDITY:				46%		
DATE:				1-20-83		
FILM THICKNESS READINGS:	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED:	MIN. MAX.	N/A	MIN. MAX.	MIN. 5.0 MAX. 9.0	MIN. MAX.	MIN. MAX.
SPECIFIED:	MIN. MAX.	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
PAINT: BATCH NUMBERS ACT:	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
				823-4-67632		
				0.222 WHITE		
				VG 4-8339		
REDUCER USED	APG*	APG*	APG*	APG*	APG*	APG*
				10% 3871		
COATING APPLIED	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE
				0.222 WHITE		
COATING EQUIP.	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input checked="" type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
APPLICATORS QUALIFIED	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
PAINT CONTRACT SUPV.				R Bauler		
CONSTR. SUPV.				R Bauler		
Q.C. INSP.				1/4-17-83		

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\*AMOUNT PER GALLON

B/BRUSH

S/SPRAY

R/ROLL

PROJECT: NAPSAPPLICATOR'S SUPV R. D. MillerJ. O. NO. 12050

REASON FOR PREPARATION	GENERAL PRIMING		SEAL COAT		FIRST FINISH		FINISH COAT		TOUCH UP BUILD UP		OTHER	
DATE:								1-21-83				
REPORT NUMBER:								ND9				
SHIFT:								1st				
SURFACE TO BE OBTAINED								RC-1				
SURFACE PREPARATION	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.
METHOD OF SURFACE PREP:								Duct				

☒ SUBSTRATE  
☐ STEEL  
☒ MASONRY  
☒ CONCRETE  
 ANCHOR PATTERN:

OBTAINED: 1.0SPECIFIED: 1.0.15WERE WATER AND OIL FILTERS USED? YES N/A NO —WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES N/A NO —

WERE THE FOLLOWING USED?

FORM RELEASE AGENTS: N/A TYPE: —CURING / HANDLING COMPOUNDS: N/A TYPE: —GROUT FINISH: N/ASANDPAPER TEXTURE: —

FINAL CLEANING:

☐ DUSTED ☒ VACUUM

	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
PAINTING SUPERVISOR						
QC INSPECTOR						

LOCATION AND REMARKS: RC#1 ELEV. 216' Painting DuctNorth From Report 002 Down To Fan 1-H.V.F. 1A 130300ST 7559 Exp 4-1-83 OFT 7431 Exp 3-21-83 Sing 7503 Exp 4-1-83

DATE:	GEN. PRIMING		SEAL COAT		1ST FINISH		FINISH COAT		TOUCH UP		OTHER		
AMBIENT TEMP.								1-21-83					
SURFACE TEMP.								80°					
DEW POINT:								80°					
REL. HUMIDITY:								56%					
DATE:								1-26-83					
FILM THICKNESS READINGS:	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs
OBTAINED:	MIN.	MAX.	N/A	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
SPECIFIED:	MIN.	MAX.	N/A	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
PAINT: BATCH NUMBERS ACT:	GEN. PRIMING		SEAL COAT		1ST FINISH		FINISH COAT		TOUCH UP		OTHER		
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		
REDUCER USED	APG*		APG*		APG*		APG*		APG*		APG*		
COATING APPLIED	COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		
COATING EQUIP.	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	
APPLICATORS QUALIFIED	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	
PAINT CONTRACT SUPV.													
CONSTR. SUPV.													
Q. C. INSP.													

\*AMOUNT PER GALLON

B/BRUSH

S/SPRAY

R/ROLL

EXHIBIT 12  
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PROJECT: NAPSAPPLICATOR'S SUPV R. BauleJ. O. NO. 12052

REASON FOR PREPARATION	GENERAL PRIMING		SEAL COAT		FIRST FINISH		FINISH COAT		TOUCH UP BUILD UP		OTHER		<input checked="" type="checkbox"/> SUBSTRATE <input type="checkbox"/> STEEL <input type="checkbox"/> MASONRY <input type="checkbox"/> CONCRETE ANCHOR PATTERN: OBTAINED: <u>1.0</u> SPECIFIED: <u>1.0</u>
DATE:							<u>1-27-83</u>						
REPORT NUMBER:							<u>010</u>						
SHIFT:							<u>1st</u>						
SURFACE TO BE OBTAINED							<u>Clean</u>						
SURFACE PREPARATION	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	SAT.	UNS.	
METHOD OF SURFACE PREP:							<u>DUST</u>						

WERE WATER AND OIL FILTERS USED? YES N/A NO \_\_\_\_\_

WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES N/A NO \_\_\_\_\_

WERE THE FOLLOWING USED? FORM RELEASE AGENTS: N/A TYPE: \_\_\_\_\_

CURING / HANDLING COMPOUNDS: N/A TYPE: \_\_\_\_\_

GROUT FINISH: N/A

SANDPAPER TEXTURE: \_\_\_\_\_

FINAL CLEANING: ☒ DUSTED ☒ VACU

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
QC INSPECTOR				<u>R. Baule</u>		

LOCATION AND REMARKS:

RC #1 ELV. 216 PAINTING VENT DUCTNorth From Report 003 Down To 1-HV E2CST-7539 Exp-4-1-83 DFT 74 31 Exp-3-21-83 Sling 7503-4-1

DATE:	GEN. PRIMING		SEAL COAT		1ST FINISH		FINISH COAT		TOUCH UP		OTHER	
AMBIENT TEMP.							<u>1-27-83</u>					
SURFACE TEMP.							<u>78°</u>					
DEW POINT:							<u>80°</u>					
REL. HUMIDITY:							<u>55°</u>					
DATE:							<u>2-1-83</u>					
FILM THICKNESS READINGS:	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	N/A		<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input checked="" type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs	<input type="checkbox"/> WFTs
OBTAINED:	MIN.	MAX.	N/A		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
SPECIFIED:	MIN.	MAX.	N/A		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
PAINT: BATCH NUMBERS ACT:	GEN. PRIMING		SEAL COAT		1ST FINISH		FINISH COAT		TOUCH UP		OTHER	
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE	
	EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE		EXP. DATE	
REDUCER USED	APG*		APG*		APG*		APG*		APG*		APG*	
COATING APPLIED	COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE		COLOR CODE	
COATING EQUIP.	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
APPLICATORS QUALIFIED	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
PAINT CONTRACT SUPV.												
CONSTR. SUPV.							<u>R. Baule</u>					
Q. C. INSP.							<u>R. Baule</u>					

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\*AMOUNT PER GALLON

B/BRUSH

S/SPRAY

R/ROLL

PROJECT: NAPSAPPLICATOR'S SUPV. R. BAULERJ. O. NO. 12050

REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER	<input checked="" type="checkbox"/> SUBSTRATE <input checked="" type="checkbox"/> STEEL <input checked="" type="checkbox"/> MASONRY <input checked="" type="checkbox"/> CONCRETE ANCHOR PATTERN:
DATE:	4-18-83						
REPORT NUMBER:	010						
SHIFT:	1st						
SURFACE TO BE OBTAINED	S410						
SURFACE PREPARATION	SAT. <input checked="" type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	SAT. <input type="checkbox"/> UNS. <input type="checkbox"/>	OBTAINED: <u>n/a</u>
METHOD OF SURFACE PREP:	1/4c dust						SPECIFIED: <u>4c</u>

WERE WATER AND OIL FILTERS USED? YES ☒ NO ☐GROUT FINISH: 4cWERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES ☒ NO ☐SANDPAPER TEXTURE: 4c

WERE THE FOLLOWING USED?

FORM RELEASE AGENTS: None TYPE: None

FINAL CLEANING:

CURING / HANDLING COMPOUNDS: None TYPE: None☒ DUSTED ☒ VACUUM

	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
PAINTING SUPERVISOR	R. Bauler					
QC INSPECTOR	1/15/83					

LOCATION AND REMARKS:

RC#2 VENT DUCT W.O. 240

COOLING COILS "B" TO COOLING COIL "C"

	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
DATE:	4-18-83					
AMBIENT TEMP.	74°					
SURFACE TEMP.	72°					
DEW POINT:	56°					
REL. HUMIDITY:	50%					
DATE:	4-19-83					
FILM THICKNESS READINGS:	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED:	3 MIN. 3 MAX.	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
SPECIFIED:	3 MIN. 3 MAX.	N/A	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
PAINT: LFS-33-636						
BATCH NUMBERS	EXP. 3-7-84					
ACT: LFS-33-0177	EXP. 3-4-84					
	APG*	APG*	APG*	APG*	APG*	APG*
REDUCER USED	4098 10%					
	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE
COATING APPLIED H.Z. 6548	431 Primer					
	<input checked="" type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
COATING EQUIP.						
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
APPLICATORS QUALIFIED	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
PAINT CONTRACT SUPV.	R. Bauler					
CONSTR. SUPV.	R. Bauler					
Q. C. INSP.	H. H.					

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\*AMOUNT PER GALLON

B/BRUSH

S/SPRAY

R/ROLL



PROJECT: NAPSAPPLICATOR'S SUPV R. BAILEYJ.O. NO. 12050

REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER	<input checked="" type="checkbox"/> SUBSTRATE <input checked="" type="checkbox"/> STEEL <input checked="" type="checkbox"/> MASONRY <input checked="" type="checkbox"/> CONCRETE ANCHOR PATTERN: OBTAINED: <u>4A</u> SPECIFIED: <u>4A</u>
DATE:	<u>4-29-83</u>		<u>5-2-83</u>				
REPORT NUMBER:	<u>012</u>		<u>013</u>				
SHIFT:	<u>1st</u>		<u>1st</u>				
SURFACE TO BE OBTAINED	<u>SP4S</u>		<u>SP4S</u>				
SURFACE PREPARATION	SAT. UNS. <input checked="" type="checkbox"/> <input type="checkbox"/>	SAT. UNS. <input type="checkbox"/> <input type="checkbox"/>	SAT. UNS. <input checked="" type="checkbox"/> <input type="checkbox"/>	SAT. UNS. <input type="checkbox"/> <input type="checkbox"/>	SAT. UNS. <input type="checkbox"/> <input type="checkbox"/>	SAT. UNS. <input type="checkbox"/> <input type="checkbox"/>	
METHOD OF SURFACE PREP:	<u>W/BLK</u>						

WERE WATER AND OIL FILTERS USED? YES ☐ NO ☐

WERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES ☒ NO ☐

WERE THE FOLLOWING USED? FORM RELEASE AGENTS, TYPE: W/2A

CURING / HANDLING COMPOUNDS 4A TYPE: ☐ DUSTED ☒ VACU

GROUT FINISH: 4A

SANDPAPER TEXTURE: 4A

FINAL CLEANING: ☐ DUSTED ☒ VACU

	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
PAINTING SUPERVISOR	<u>R. Bailey</u>		<u>R. Bailey</u>			
QC INSPECTOR	<u>W. Bailey</u>		<u>W. Bailey</u>			

LOCATION AND REMARKS: ROH2 VENT Duct Elv. 216 W.O. 240  
FROM COILING COIL 'A' TO COILING COIL 'B'

	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
DATE:	<u>4-29-83</u>		<u>5-3-83</u>			
AMBIENT TEMP	<u>77</u>		<u>76</u>			
SURFACE TEMP	<u>74</u>		<u>72</u>			
DEW POINT:	<u>56</u>		<u>54</u>			
REL. HUMIDITY:	<u>47%</u>		<u>48%</u>			
DATE:	<u>4-30-83</u>					
FILM THICKNESS READINGS:	<input checked="" type="checkbox"/> DFTs <input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED:	<u>3 MIN. MAX</u>	<u>N/A</u>	<u>MIN. MAX</u>	<u>MIN. MAX</u>	<u>MIN. MAX</u>	<u>MIN. MAX</u>
SPECIFIED:	<u>7 MIN. MAX</u>	<u>N/A</u>	<u>MIN. MAX</u>	<u>MIN. MAX</u>	<u>MIN. MAX</u>	<u>MIN. MAX</u>
	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
PAINT:	<u>105-83-836</u>		<u>105-83-308</u>			
BATCH NUMBERS:	<u>3-2-84</u>		<u>3-25-84</u>			
ACT:	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
<u>105-33-0177</u>	<u>3-1-84</u>		<u>105-43-0199</u>			
	APG	APG	APG	APG	APG	APG
REDUCER USED	<u>10% 4095</u>		<u>10% 4095</u>			
COATING APPLIED	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE	COLOR CODE
	<u>105-83-836</u>		<u>105-83-308</u>			
COATING EQUIP.	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
APPLICATORS QUALIFIED	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
PAINT CONTRACT SUPV.	<u>R. Bailey</u>		<u>R. Bailey</u>			
CONSTR. SUPV.	<u>R. Bailey</u>		<u>R. Bailey</u>			
Q. C. INSP.	<u>W. Bailey</u>		<u>W. Bailey</u>			

REASON FOR PREPARATION	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER
DATE: <u>5-1-83</u>						
REPORT NUMBER: <u>513</u>						
SURFACE TO BE OBTAINED: <u>3</u>						
SURFACE PREPARATION METHOD OF SURFACE PREP: <u>QUITE</u>	SAT. UNS.	SAT. UNS.	SAT. UNS.	SAT. UNS.	SAT. UNS.	SAT. UNS.

☒ SUBSTRATE

☒ STEEL

☒ MASONRY

☒ CONCRETE

ANCHOR PATTERN: N/A

OBTAINED: N/A

SPECIFIED: N/A

WAS WATER AND OIL FILTERS USED? YES N/A NO N/A

WERE THEY CHECKED REGULARLY FOR CLEANNESS? YES N/A NO N/A

WERE THEY USED AS DIRECTED? YES N/A NO N/A

CURING/HANDLING COMPOUNDS TYPE: N/A

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
INSPECTOR						

REMARKS: RE#2 VENT DUCT FLU. 216 WO 240  
COILS "B" TO COIL "C"

GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
DFTs WFTs	DFTs WFTs	DFTs WFTs	DFTs WFTs	DFTs WFTs	DFTs WFTs
MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.	MIN. MAX.
EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE	EXP. DATE
APG*	APG*	APG*	APG*	APG*	APG*
OR CODE	OR CODE	OR CODE	OR CODE	OR CODE	OR CODE
YES NO	YES NO	YES NO	YES NO	YES NO	YES NO



PROJECT: NAPSAPPLICATOR'S SUPV. R. BaulerJ.O. NO. 12060

REASON FOR PREPARATION:	GENERAL PRIMING	SEAL COAT	FIRST FINISH	FINISH COAT	TOUCH UP BUILD UP	OTHER	SUBSTRATE
DATE: <u>4-22-83</u>			<u>5-2-83</u>				<input checked="" type="checkbox"/> STEEL
REPORT NUMBER: <u>011</u>			<u>014</u>				<input checked="" type="checkbox"/> MASONRY
SHIFT: <u>1st</u>			<u>1st</u>				<input checked="" type="checkbox"/> CONCRETE
SURFACE TO BE OBTAINED: <u>SP10</u>			<u>SP10</u>				ANCHOR PATTERN: <u>4A</u>
SURFACE PREPARATION	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	SAT. <input checked="" type="checkbox"/> UNS. <input checked="" type="checkbox"/>	OBTAINED: <u>4A</u>
METHOD OF SURFACE PREP: <u>W/ Abrasive</u>			<u>DUSTED</u>				SPECIFIED: <u>4A</u>

WERE WATER AND OIL FILTERS USED? YES ☒ NO ☒GROUT FINISH: 4AWERE THEY CHECKED REGULARLY FOR CLEANLINESS? YES ☒ NO ☒SANDPAPER TEXTURE: 100

WERE THE FOLLOWING USED?

FORM RELEASE AGENTS: N/A TYPE: N/A

FINAL CLEANING:

CURING / HANDLING COMPOUNDS: 4A TYPE: N/A☒ DUSTED ☒ VACUUM

PAINTING SUPERVISOR	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>R. Bauler</u>			<u>R. Bauler</u>			
QC INSPECTOR	<u>W. B. Baur</u>		<u>W. B. Baur</u>			

LOCATION AND REMARKS:

Re #2 VENT DUCT - W0240  
From COOLING COILS "C" TO COOLING COIL "A"

DATE:	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
<u>4-22-83</u>			<u>5-2-83</u>			
AMBIENT TEMP. <u>76</u>			<u>78</u>			
SURFACE TEMP. <u>72</u>			<u>74</u>			
DEW POINT: <u>54</u>			<u>50</u>			
REL. HUMIDITY: <u>48%</u>			<u>46%</u>			
DATE: <u>4-22-83</u>			<u>5-2-83</u>			
FILM THICKNESS READINGS:	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	N/A	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs	<input type="checkbox"/> DFTs <input type="checkbox"/> WFTs
OBTAINED:	MIN. <u>5</u> MAX. <u>5</u>	N/A	MIN. <u>5</u> MAX. <u>5</u>	MIN. <u>5</u> MAX. <u>5</u>	MIN. <u>5</u> MAX. <u>5</u>	MIN. <u>5</u> MAX. <u>5</u>
SPECIFIED:	MIN. <u>5</u> MAX. <u>5</u>	N/A	MIN. <u>5</u> MAX. <u>5</u>	MIN. <u>5</u> MAX. <u>5</u>	MIN. <u>5</u> MAX. <u>5</u>	MIN. <u>5</u> MAX. <u>5</u>
PAINT: <u>LES-33-636</u>	GEN. PRIMING	SEAL COAT	1ST FINISH	FINISH COAT	TOUCH UP	OTHER
BATCH NUMBERS <u>EXP. 3-3-84</u>	EXP. DATE <u>LES-33-308</u>	EXP. DATE <u>7-25-84</u>	EXP. DATE <u>LES-33-308</u>	EXP. DATE <u>7-25-84</u>	EXP. DATE	EXP. DATE
ACT: <u>LES-33-0177</u>	EXP. DATE <u>EXP. 3-1-84</u>	EXP. DATE <u>EXP. 3-1-84</u>	EXP. DATE <u>LES-43-0177</u>	EXP. DATE <u>4-4-84</u>	EXP. DATE	EXP. DATE
REDUCER USED	APG* <u>4093 10%</u>	APG*	APG* <u>10% 4093</u>	APG*	APG*	APG*
COATING APPLIED <u>W/ Primer</u>	COLOR CODE <u>W/ Primer</u>	COLOR CODE	COLOR CODE <u>W/ Finish</u>	COLOR CODE	COLOR CODE	COLOR CODE
COATING EQUIP.	<input checked="" type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input checked="" type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S	<input type="checkbox"/> B <input type="checkbox"/> R <input type="checkbox"/> S
TRIAL MIST DEMONSTRATION	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
APPLICATORS QUALIFIED	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
PAINT CONTRACT SUPV.	<u>R. Bauler</u>		<u>R. Bauler</u>			
CONSTR. SUPV.	<u>R. Bauler</u>		<u>R. Bauler</u>			
Q.C. INSP.	<u>W. B. Baur</u>		<u>W. B. Baur</u>			
EXHIBIT <u>18</u>						
Page <u>29</u> of <u>29</u> Pages						
AMOUNT PER GALLON B/BRUSH S/SPRAY R/ROLL						



STATEMENT

PLACE: North Anna Power Station

DATE/TIME: 12-5-84/10:15AM

I, William Juniorous Harris, do hereby make the following voluntary statement to Robert H. Burch who has identified himself to me as an Investigator with the United States Nuclear Regulatory Commission. I do hereby make this voluntary statement without any threats having been made against me or any promises extended to me. I reside at

I have been employed with Virginia Electric and Power Company (VEPCO) at the North Anna Nuclear Station (NAPS) as a Quality Control (QC) Inspector since September 1980. I have inspected <sup>with and am certified</sup> in the civil, electrical and receipt disciplines; and also in painting and coatings. The only training I have received in coating inspections is On-The-Job training at the NAPS site. <sup>with Coating</sup> ~~on the job training~~ projects on which I performed inspection work at <sup>with NAPS</sup> ~~the~~ is the coating of the <sup>Air Cooling and Purging Systems with</sup> ~~(ventilation ring ductwork)~~ in the containment buildings of Unit 1 and Unit 2. The unit 1 coating work was done in December 1982 and January 1983 and the unit 2 work was done about April 1983. For the most part I was the full time inspector on unit 1, assisted on this project by my <sup>with Co-worker</sup> ~~assistant~~ Bill Burns. To a lesser extent I <sup>with inspected vent ductwork Coating in</sup> ~~assisted~~ unit 2, ~~and~~ assisting Burns on this project. As I recall my supervisor Jim Smith informed me ~~that~~ that I would be the lead inspector on unit 1 but I do not recall if I was designated as lead on unit 2. I also remember that both jobs were completed during an outage and there was some <sup>with urgency</sup> ~~urgency~~ communicated to me to get the job done within the time allotted for the <sup>with outage.</sup> ~~outage~~. <sup>with VEPCO employee</sup> ~~employee~~ I recall that I had several discussions with <sup>A</sup> Bob Bauler regarding these projects, especially on unit 1. Bauler was the Coating supervisor in the NAPS Construction Department and he was the person actually responsible for getting the job done on time and in the proper manner. As I recall, the purpose for coat-

ing unit 1 and 2 ventilation ring ductwork was to eliminate patches of boric acid corrosion that was forming on certain sections of the ductwork. Specifically, with regard to unit 1 <sup>with ventilation ring</sup> ductwork, I recall Bauler explaining to me that the decision to coat this <sup>with system</sup> ~~was a temporary one~~ was a temporary one and that at some later time the corroded sections would be removed and replaced with new ductwork and parts as required. This conversation with Bauler occurred about November 1982 and I remember that he told me that the station maintenance department had approved the temporary measures to correct the corroding ductwork. In my opinion, Bauler did not emphasize to me the importance of <sup>with the</sup> ~~the~~ coating project and as a result I did not perform my inspections of this work with a serious and positive attitude. <sup>with Mr. Burch</sup> ~~I have reviewed~~ I have reviewed the Protective Coating Surface Preparation Records (PCSPR) for units 1 and 2 and I have identified ~~some~~ certain entries that do not accurately reflect the <sup>with inspection</sup> work I performed on these two assignments. Although at the time I signed my name to these PCSPR's I did not realize that I was <sup>with Certifying to</sup> ~~manipulating~~ <sup>which</sup> ~~work~~ was performed in a manner other than stated, however, I now realize that by signing my name to these records without verifying that work was performed as stated is a falsification of records. I did not deliberately or intentionally falsify these PCSPR's, however, I do acknowledge that I did not perform the necessary verification in all instances as required by NAPS Procedures NAS 1016 ~~and~~ <sup>with regarding</sup> QCI 11.1, the only procedures which were in effect at the time ~~concerning~~ the inspection and/or application of coating materials in a containment environment. With regard ~~to~~ to the PCSPR's for unit 1 and the information contained therein, I did not actually witness the painters cleaning the surface of the ventilation ring ductwork in preparation for <sup>with</sup> ~~the~~ coating. Due to the contamination involved in this process, I did not observe surface preparation until it had been completed. Although the PCSPR's for unit 1 state that a grinder was used to obtain an SP <sup>with Primer Coat</sup> # 10 surface, <sup>I do with</sup> ~~not know~~ <sup>what with</sup> ~~method~~ was used to obtain this type of surface. An SP #10 surface, according to NAPS ~~procedure~~ <sup>with</sup> procedure, can only be obtained by

EXHIBIT 19

Page 2 of 5 Pages

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<sup>WPH</sup> sandblasting, <sup>WPH</sup> which is prohibited in containment. Although I certified that an <sup>WPH</sup>

SP #10 surface was obtained by grinding I do not know if this is true because <sup>WPH</sup> I <sup>WPH</sup> <sup>WPH</sup> surface preparation. <sup>WPH</sup> did not observe <sup>WPH</sup> In my opinion and based upon an inspection after the surface was prepared, I believe the surface was of SP#10 quality. I make this statement based upon <sup>WPH</sup> my <sup>WPH</sup> assignment, <sup>WPH</sup> experience prior to this <sup>WPH</sup> assignment with this type of surface. To my knowledge, a comparator scale was not used on the unit 1 or 2 projects to make a determination regarding the type of surface obtained. Basically what happened is that Bob Bauler, Construction Supervisor told me that the surface was <sup>WPH</sup> SP#10 <sup>WPH</sup> and I took his word for it. I <sup>WPH</sup> assumed that since Bauler was a professional in his job and had the best interest of NAPS in mind that he would not provide me with misleading information. In reality, I accepted what Bob <sup>WPH</sup> Bauler <sup>WPH</sup> told me about surface preparation, signed my name on the form and intended for my signature to <sup>WPH</sup> mean I had verified the <sup>WPH</sup> method used to obtain the SP#10 surface. I did not do so. Also, with regard to temperature entries on the PCSPR's, I did take some verifying temperatures but in some instances I accepted the temperatures as recorded on the PCSPR by Bauler and signed that I agreed with <sup>WPH</sup> I did not always do this. and had verified his work. <sup>WPH</sup> I did not verify his <sup>WPH</sup> work in each and every instance, although I did do this on a number of occasions. Again, I was lax in not <sup>WPH</sup> always <sup>WPH</sup> verifying Bauler's data and <sup>WPH</sup> I did not perform my duties as an inspector of coatings in accordance with the procedures which were in place at the time. With regard to the primer coating used in unit 1 on the ventilation ring ductwork, I again was told by Bauler what had been used and did not do an independent verification. As I recall, the paint buckets were all marked with <sup>WPH</sup> Mobil Chromax, meaning the <sup>WPH</sup> type of primer used. I did not verify and confirm as to <sup>WPH</sup> whether this was the <sup>WPH</sup> or another product <sup>WPH</sup> ring <sup>WPH</sup> my <sup>WPH</sup> signature type of coating used to prime the unit 1 ventilation/<sup>WPH</sup> ductwork. <sup>WPH</sup> on the PCSPR's should mean that I did verify this but in reality I did not do so.

<sup>WPH</sup> The only reason I can think of as to why I did not verify this is that previously, <sup>WPH</sup> before the project began, <sup>WPH</sup> Bauler had minimized the importance of coating the <sup>WPH</sup> ventilation <sup>WPH</sup> ring ductwork, telling me <sup>WPH</sup> that <sup>WPH</sup>

it was a temporary corrective measure ~~rather than a~~ <sup>WPH Permanent fix.</sup> ~~rather than a~~ I suppose  
this caused me to have a relaxed attitude about ~~the~~ <sup>WPH this</sup> inspection process regarding  
the unit 1 ventilation ring ductwork and caused me not to approach this in a  
serious frame of mind. I recognize now that I ~~approached~~ <sup>WPH</sup> approached this inspection  
<sup>WPH in a less than serious manner</sup> and did not have the proper frame of mind. I also recall that <sup>WPH during this time</sup> I gave some thought  
to the fact that the ventilation ring ductwork was constructed of galvanized steel,  
a material that should not have been coated. I did not express this concern to anyone  
at the time and thought that it would not matter since <sup>WPH Coating</sup> ~~it~~ was going to be a tem-  
porary action. I was also aware at the time the work was done that the NAPS  
Engineering Department had not done an engineering evaluation of the project.  
I did not express this concern to anyone either. I also wondered about the safety  
aspects of the coating project since it was being performed in a containment  
environment, however, I did not discuss this ~~with~~ <sup>WPH</sup> with anyone. My inspection efforts  
on Unit 2 in April 1983 were ~~much~~ <sup>WPH</sup> much less extensive than those on unit 1 but I  
could say that my attitude and my approach to <sup>WPH the unit 2</sup> ~~the~~ project and the methods I used  
were the same as for unit 1. Again, I did not deliberately falsify or certify to  
inaccurate data, I simply just did not consider the importance of making sure that  
the coating materials were applied according to the existing procedures. The reason  
I did not consider the importance is because Bauler had previously <sup>WPH told</sup> ~~told~~ me that  
all of <sup>WPH the</sup> ~~the~~ corroded <sup>WPH ventilation</sup> ~~ventilation~~ ring ductwork would be permanently replaced  
at a later date. I also did not consider the safety implications of coating  
a galvanized steel surface <sup>WPH and</sup> ~~the~~ loss of coolant accident or DBA. This aspect  
of safety, had I thought about it, would have caused me to raise a concern immedi-  
ately with my supervisor. I am not aware that anyone else, either in the QC  
department or construction department, considered this aspect of safety when the  
decision was made to coat the ventilation ring ductwork in units 1 or 2. I was un-  
<sup>WPH when I performed inspections</sup> aware that paint peeling from the vent ductwork during a LOCA/DBA could clog fil-  
ters and screens in the sump pump. <sup>WPH</sup> ~~the~~ I am now aware  
of this possibility.



In conclusion, I would like to state that I did not perform <sup>coating</sup> my/inspection duties on unit 1 and 2 ventilation ring ductwork in a professional manner because I did not take serious the <sup>WPH</sup> ~~nature~~ nature of the work. I also allowed Bob Bauler to use me in <sup>WPH</sup> ~~an~~ an unprofessional manner. I state unequivocally and steadfastly that I have never performed any other inspection at NAPS in the manner in which I performed the coating inspections and I have never falsified <sup>WPH</sup> ~~QC~~ QC document or <sup>WPH</sup> ~~entered~~ entered any data on a QC form or report <sup>WPH</sup> ~~without~~ without verifying it as being accurate and complete. I regret that I failed to perform these <sup>WPH</sup> ~~coating~~ coating inspections on the unit 1 and 2 ventilation ring ductwork in the manner which I am accustomed to performing all my inspection duties. To the best of my knowledge, <sup>or management</sup> I know of no craft/personnel at NAPS <sup>WPH</sup> ~~with~~ with whom I do not relate well and I can think of no one who dislikes me. I have never made a statement to any painter or anyone else that I am afraid of radiation. I have never shunned my duties in <sup>WPH</sup> ~~containments~~ containments because of this. I respect radiation but I am definitely not afraid of it. <sup>WPH</sup>

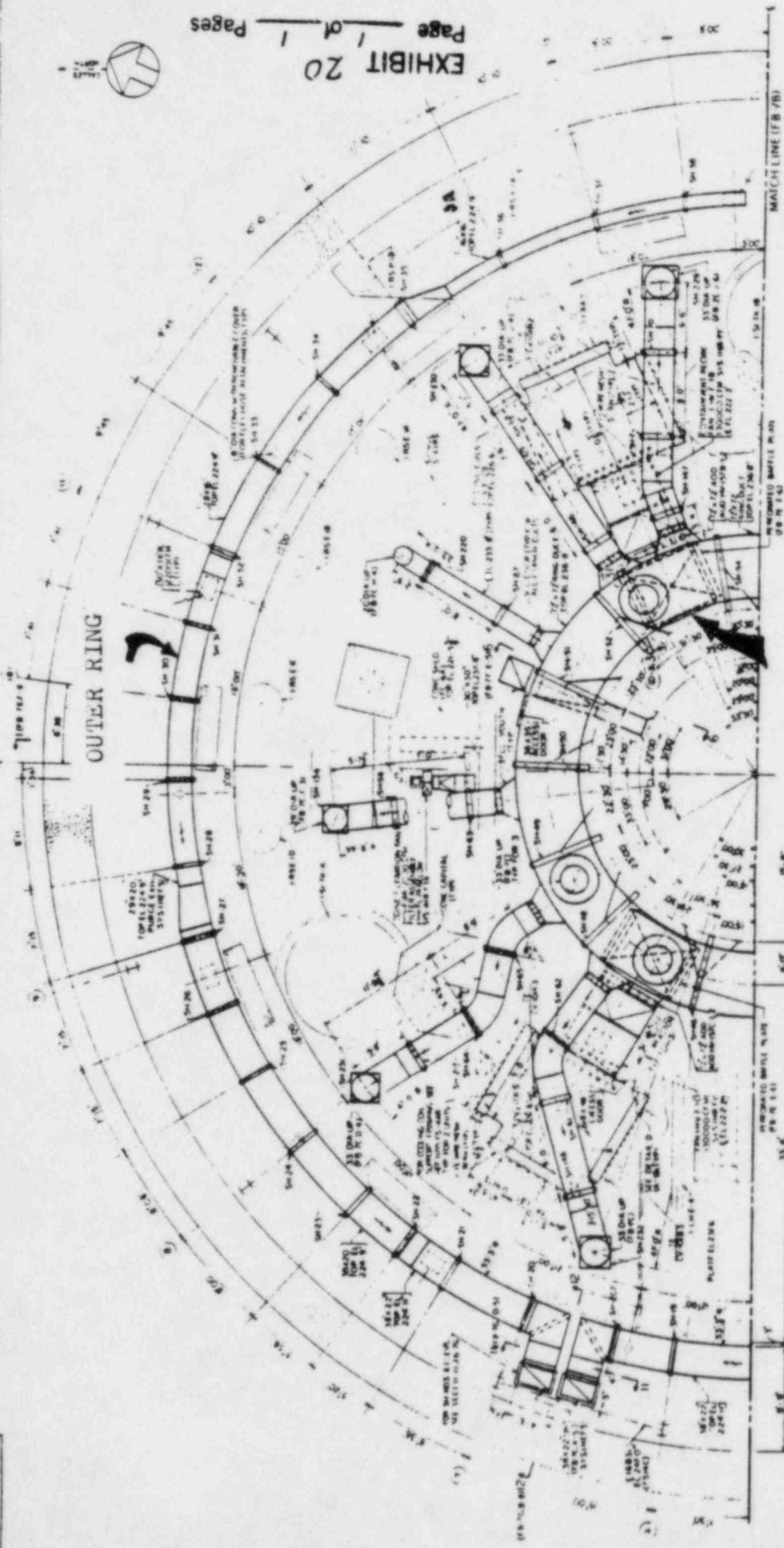
I have read the foregoing statement consisting of 5 <sup>WPH</sup> ~~handwritten~~/typed pages. I have made and initialed any necessary corrections. I swear that the foregoing statement is true and correct. Signed on 12/5/84 at 3:15 PM

SIGNATURE: William Innocent Harris  
NAME

Subscribed and sworn to before me this 5<sup>th</sup> day of December 1984 at NAPS, Mineral, VA.

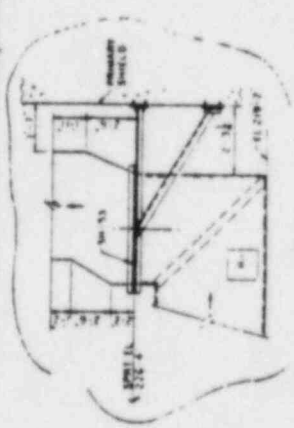
INVESTIGATOR: Robert H. Bauler  
NAME

WITNESS: \_\_\_\_\_  
NAME/TITLE



MATCH LINE (F B / B)

INNER RING



PLAN EL 206'-11"

SCALE - FEET  
0 2 4 6 8 10

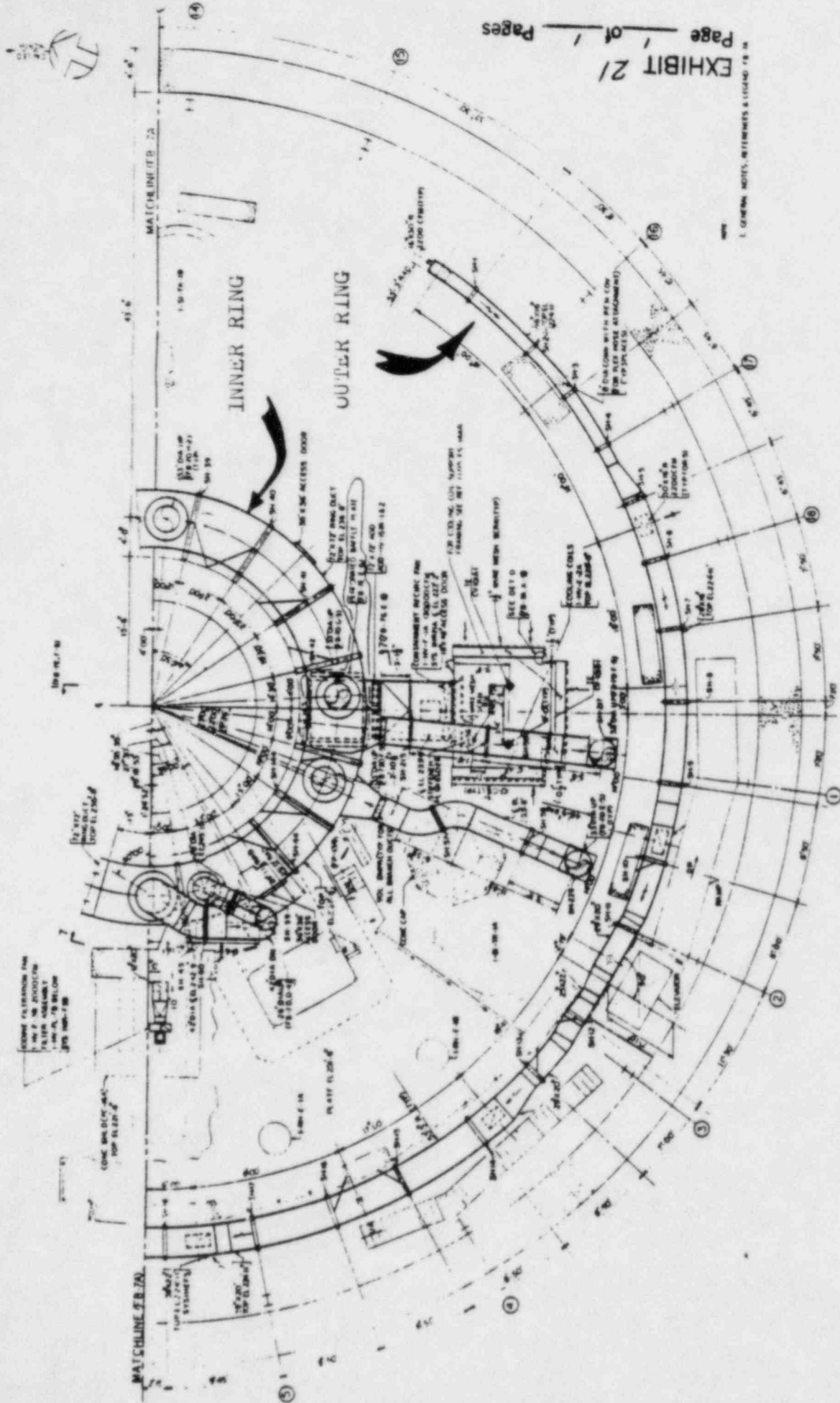
CONTAINMENT AIR RECIRCULATION  
SYSTEM AND PURGE EXHAUST  
NORTH ANNA POWER STATION  
UNITS 1 AND 2

LEGEND  
1. ALL DIMENSIONS ARE IN FEET AND INCHES (F'/IN').  
2. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.

NOTES  
1. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.  
2. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE NOTED.



DETAIL D  
31'-31"  
16'-01"  
16'-01"



1. GENERAL NOTES, REFERENCES & LEGEND TO BE

0 2 4 6 8 10  
SCALE - FEET

PLAN EL 216.11

CONTAINMENT AIR RECIRCULATION  
SYSTEM AND PURGE EXHAUST DUCT  
NORTH ANNA POWER STATION  
UNITS 1 AND 2

1499999160

REQUEST FOR WORK  
MPP SUPPORT  
NORTH ANNA POWER STATION  
UNITS 1 & 2

TO: MPP Construction Superintendent		Date: <u>12-13-82</u>	Unit No.: <u>I</u>	
Station Approval: <u>[Signature]</u> Date: <u>12-17-82</u>		Account No.: <u>910-5559</u>		
Originator <u>[Signature]</u> Date: <u>12-13-82</u>		Project No. (Station Use Only)		
Department Supt./Designee <u>[Signature]</u> Date: <u>12-13-82</u>		<u>59</u> Station Code	<u>22</u> Project Code	<u>4401</u> Activity Code
Superintendent Projects/Des. <u>[Signature]</u> Date: <u>12-13-82</u>		<u>I</u> Unit No.		
		QA Approval: <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>		
Description of Work: <u>Provide labor + Carpenter support, and paint ring duct + vent ducts in unit I Reactor containment basement.</u>				
MPP Acceptance: <u>[Signature]</u> MPP Construction Superintendent/Designee		<u>6/14/82</u> Date		
MPP Estimated Cost <u>[Signature]</u> Estimate Approved *		Labor <u>43,800.00</u> Material <u>3,800.00</u> Supv. - <u>10,000.00</u> Station Manager <u>5,000.00</u> HP DECON. <u>5,000</u>		
*Greater than \$5,000 - Station Manager or Assistant \$5,000 or less - Departmental Superintendent				
Work Completed: <u>[Signature]</u> MPP Construction Superintendent/Designee		<u>2/14/83</u> Date		
<u>[Signature]</u> Station Completion Concurrence (Originator)		<u>2-24-83</u> Date		

Distribution:

EXHIBIT, 22  
Page 1 of 3 Pages

Station Manager, Asst. Station Manager, Supt. Projects,  
Station Accountant, Supt. Maintenance, Supt. Operations,  
Supt. Technical Services, Originator, Labor/Cost Planner,  
Budgeting Dept. OJRP/5



1. (Department)		MECHANICAL		ROUTINE	
2. System	NA	3. Component	DUCTWORK	4. Room	POB
5. Drawing No.		NA			
6. Description of Problem THE DUCT HAS BEEN COVERED WITH POLYMER TO PREVENT CORROSION					
7. No. of Stickers Placed	8. Equipment Location	9. Building	10. Elevation	11. Detail	
		101	716		
12. Submitted By		13. Date		14. Time	
		12/22/67		1:12	
15. Maintenance Availability		16. Equipment Status			
		OK			
17. Tech Spec Item?		18. Tech Spec No.			
NA		NA			
19. Date		20. Time		21. Project No.	
				NA	
22. Is Not Returned To Service Within		23. Is In Mode 3 By		24. Time	
NA Hours		NA		NA	
25. Is Not Returned To Service Within		26. Is In Mode 8 By		27. Time	
NA Hours		NA		NA	
28. Returned To Service To Entry Into Mode		29. Instrument Action No.		30. Deviation Report Submitted?	
NA		NA		NA	
31. Supervisor		32. Date		33. Time	
NA		12/23		6:10	



VEPCO - NORTH ANNA POWER STATION  
MAINTENANCE REPORT

MR NO 82-62-0603003

To (Department) **MECHANICAL** Classification **ROUTINE**

System **BLDG** Component **FAN** Mark No **NONE** Drawing No **BA**

Description of Problem  
**PAINT THE TOP OF CONTAINMENT RECIRC FAN DUCT WORK**

No. of Stickers Placed **0** Equipment Location Building **RC2** Elevation **291** Detail **NONE**

Submitted By **STILES R.E.** Date **06/02/83** Time **11:45** Maintenance Availability **MODE 5-COLD SHUTDOWN**

Safety Related? **NO** Tech Spec Item? **NO** Tech Spec No. **BA**

Date & Time Equipment Became Inoperable Date \_\_\_\_\_ Time \_\_\_\_\_ Project No **NOT ASSIGNED**

If Equipment is Not Returned To Service Within **BA** Hours Be In Mode 3 By Date **BA** Time **BA**

If Equipment is Not Returned To Service Within **BA** Hours Be In Mode 5 By Date **BA** Time **BA**

Must Be Returned To Service Prior To Entry Into Mode **BA** Instrument Action No. **BA** Deviation Report Submitted? **NO**

Shift Supervisor **STARR R.C.** Date **6/03** Time **23**

Comments **#18**

TO BE COMPLETED BY FOREMAN AND SHIFT SUPERVISOR

Tagging of Equipment Required? ☐ Yes ☒ No ☐ Special (specify): \_\_\_\_\_ Tagging Report No. **N/A**

Radiation Work Permit Required? ☒ Yes ☐ No Radiation Work Permit No. **93-SF-381** Welding & Flame Permit Required? ☐ Yes ☒ No

Job Assigned To **PIPIN** Job Assigned By **PIERCE D.S.** Date **6/1/83** Time **0810**

Procedures To Be Used **NA**

Shift Supervisor Authorization **[Signature]** Date **6/1/83** Time **1446**

TO BE COMPLETED BY PERFORMER OF MAINT. & REVIEWERS

Tagging Verified By **N/A** ☐ Check Here & Use The Back Of This Form If More Space Is Required

Work Performed **Work started with verbal approval of operations. Painted duct as per attached photo.**

Procedures Used **NA** Test Equipment Used **None**

Job Completed & Area Cleared By **PIPIN** No. of Stickers Removed **0** Tagging Report Cleared Date **N/A** Time **N/A**

Equipment Was Declared Operable Date **NA** Time **NA** Total Downtime **NA** Hours Did This MR Cause a Power Reduction in Excess of 20% For a Period Greater Than Four Hours? ☐ Yes ☒ No

Reviewed By Shift Supervisor **[Signature]** Date **7/21/83** Time **0115**

Summary **PAINTED DUCTWORK**

Materials Used	Avail. Code	Quan.	Manufacturer	Mfr's Part No.	Serial No.	Veeco Stock No.	Veeco P.O. No.
see attached photo							

Avail. Code 0-In Stock, 1-Spec Order, 2-Repaired, 3-Mfr's in Stock, 4-Rec'd Other

Reviewed By Foreman Or Supervisor **[Signature]** Date **7/15/83** Time **1515**

Reviewed By Quality Control **[Signature]** Date \_\_\_\_\_

EXHIBIT 23 Page **2** of **2** Pages

## MEMORANDUM

North Anna Power Sta. OFFICE

Oct 11 1984

TO Mr. R. H. Burde

FROM S. B. Eisenhart

SUBJECT DOCUMENT SEARCH

At your request, I performed a documentation search for an engineering decision or determination related to the painting of the Unit 1 and 2 ring ducts inside containment for the period Dec 1982 through August 1983.

I was not able to locate any documented engineering decision related to this topic during this time frame.

EXHIBIT, 24  
Page 1 of 1 Pages

(SIGNED)

Stephen B. Eisenhart  
Licensing Coordinator





VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION

34 SEP 4 P 1 : 24 NO. BOX 402

MINERAL, VIRGINIA 23117

August 30, 1984

U. S. Nuclear Regulatory Commission  
Document Control Desk  
016 Phillips Building  
Washington, D.C. 20555

Serial No. N-84-014  
NO/RCS: nih  
Docket No. 50-338  
50-339  
License No. NPF-4  
NPF-7

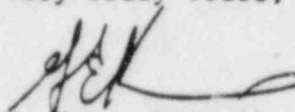
Dear Sirs:

The Virginia Electric and Power Company hereby submits the following  
License Event Report applicable to North Anna Unit No. 1 and 2.

Report No. LER 84-006

This report has been reviewed by the Station Nuclear Safety and Operating  
Committee and will be forwarded to Safety Evaluation and Control for their  
review.

Very Truly Yours,

  
E. Wayne Harrell  
Station Manager

Enclosures (3 copies)

cc: Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 2900  
Atlanta, Georgia 30303

8409100421 8pp.

EXHIBIT 25  
Page 1 of 8 Pages

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) North Anna Power Station Units 1 and 2										DOCKET NUMBER (2) 0 5 0 0 0 3 B 18										PAGE 1 1 OF 0 1 7																														
TITLE (4) Application of Unqualified Protective Coatings on Containment Ventilation Ductwork																																																		
EVENT DATE (5)									LER NUMBER (6)									REPORT DATE (7)									OTHER FACILITIES INVOLVED (8)																							
MONTH			DAY			YEAR			YEAR			SEQUENTIAL NUMBER			REVISION NUMBER			MONTH			DAY			YEAR			FACILITY NAMES												DOCKET NUMBER (3) 0 5 0 0 0 3 B 13 19											
0 8			0 1			8 4			8 4			— 0 0 6			— 0 0			0 8			3 0			8 4															0 5 0 0 0											
OPERATING MODE (9) 5										THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11):																																								
POWER LEVEL (10) 0 0 0										20.402(b)										20.408(a)										80.734a(2)(iv)										73.710										
										20.408(a)(1)(i)										80.38(a)(1)										80.734a(2)(iv)										73.710										
										20.408(a)(1)(ii)										80.38(a)(2)										80.734a(2)(iv)										OTHER (Specify in Abstract below and in Test, NRC Form 308A)										
										20.408(a)(1)(iii)										80.734a(2)(i)										80.734a(2)(iv)(A)																				
										20.408(a)(1)(iv)										80.734a(2)(ii)										80.734a(2)(iv)(B)																				
20.408(a)(1)(v)										80.734a(2)(iii)										80.734a(2)(v)																														
LICENSEE CONTACT FOR THIS LER (12)																																																		
NAME E. Wayne Harrell																				TELEPHONE NUMBER AREA CODE 7 0 3 8 9 4 1 5 1 5 1																														
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																																		
CAUSE			SYSTEM			COMPONENT			MANUFACTURER			REPORTABLE TO NRC			CAUSE			SYSTEM			COMPONENT			MANUFACTURER			REPORTABLE TO NRC																							
SUPPLEMENTAL REPORT EXPECTED (14)																				EXPECTED SUBMISSION DATE (15)										MONTH DAY YEAR																				
YES (If yes, complete EXPECTED SUBMISSION DATE)																				X NO																														

ABSTRACT (Limit to 1400 spaces. A space includes fifteen single-space typewritten lines) (16)

ABSTRACT

The Air Cooling and Purging System galvanized ductwork and supports in the lower level of Unit No. 1 and Unit No. 2 Containments have been coated to mitigate corrosion. Review of Station Records indicated that the coating materials selected were not known to be qualified for application within the Containment when applied over a galvanized substrate. Subsequent DBA and adhesion tests were performed on test panels removed from the ductwork which verified that the coating did not meet the required performance criteria. The cause of the event was determined to be primarily due to inadequate classification of the work and secondarily to a failure of personnel to follow site procedures controlling application of coatings within the Containment. The corrective action taken was to install a Type 304 stainless steel wire mesh screen over the coated surfaces of the ductwork and supports. The wire screen will retain the coating material which may disbond from the ductwork following a LOCA and therefore ensure that there will be no impact on the operation of safety related equipment. Site procedures have been strengthened in order to prevent recurrence and training has been provided.

EXHIBIT 25

Page 2 of 8 Pages

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		08	4	00	
North Anna Power Station Units 1 and 2	05000338	84	006	000	2 OF 7

TEXT IF MORE SPACE IS REQUIRED, USE ADDITIONAL NRC Form 366A 2/1/77

# 1. Description of the Event

The Air Cooling and Purging System (EISS system identifier VD) ductwork (EISS identifier DUCT) and supports (EISS identifier SPT) in the lower level of Unit 1 and Unit 2 Containments have been coated to mitigate corrosion in areas where borated water could leak on galvanized surfaces of the duct. The application of the coating was completed in Unit No. 1 and Unit No. 2 Containments in January, 1983 and May, 1983, respectively. Following a recent report that the coating system utilized in Unit No. 1 may not have been qualified, an investigation was initiated to determine the suitability of the coatings applied.

Section 3.8.2.7.6 of the UFSAR states the general requirements for protective coatings within the containment liner boundary. It is necessary that protective coatings remain intact if subjected to the environment associated with a postulated LOCA. This section of the UFSAR also states the the coating systems used during initial construction were qualified by DBA testing. A description of qualified coatings that were specified for containment interior painting is given in Table 3.8-10 of the UFSAR. The extent to which unqualified coatings were used in the Containment is given in UFSAR Table 3.8-11. The UFSAR states that coatings applied after initial construction will be acceptable if they meet the technical performance requirements for simulated DBA testing set forth in ANSI N101.2-72, "Protective Coatings (Paints) for Light Water Nuclear Reactor Containment Facilities."

Review of the Station Records indicated that the following coating materials were applied to the galvanized ductwork and supports:

## Unit No. 1 Containment

Primer - Mobile Chromox Red Primer, No. 13-R-50

Topcoat - Dupont Corlar Dual Build Epoxy Enamel,  
No. 823-Y-67632 with Activator No. VG-Y-8339

## Unit No. 2 Containment

Primer - Keeler and Long White Epoxy Primer 6548

Topcoat - Keeler and Long White Epoxy Finish

It should be noted that the Protective Coatings Preparation Records indicated that the primer selected for application on Unit 1 was Mobil Chromox Red Primer No. 13-R-50. However, a further review of Station purchasing and the batch mixing records implies that a similar alkyd, Dereka 505 manufactured by Cheeseman - Debevoise Company, was used for the primer on Unit No. 1.

EXHIBIT 25  
Page 3 of 8 Pages

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/95

FACILITY NAME (1):  North Anna Power Station Units 1 and 2	DOCKET NUMBER (2):  05000338	LER NUMBER (6):			PAGE (3):  03 OF 07
		YEAR	SEQUENT. NUMBER	REVISION NUMBER	
		84	006	000	

TEXT: If report appears as required, use appropriate NRC Form 366A (1-17)

The Alkyd primer which the records indicated was applied in Unit No. 1 is not nuclear qualified. The Dupont epoxy is nuclear qualified, but neither the primer or topcoat is approved for use over galvanized surfaces. Since the coating system used in Unit 1 was not known to be qualified, a Deviation Report was written on Unit 1 on 08-01-84. The deviation was determined to be reportable under the requirements of 10 CFR50.73 (a) (2) (v) (D) since failure of the coating following a postulated LOCA could have potentially prevented the fulfillment of the safety function of systems required to mitigate the consequences of the accident. Specifically, if the paint came off the ductwork during a LOCA, a concern existed that a portion could be carried to the containment sump. If a sufficient amount of paint particles enter the sump and they are larger than the smallest restriction in the fine mesh sump screens (EIIIS identifier SCN), then there may be some blockage of the screens. At the time the deviation was reported, Unit No. 1 was in a refueling outage.

Further evaluation indicated that the Keeler and Long epoxy coating system applied in Unit No. 2 is nuclear qualified, but was not known to be qualified over a galvanized substrate. Therefore, the Unit No. 2 reactor was shutdown on 08-03-84 pending further evaluation and implementation of any necessary corrective action.

A field walkdown was conducted to verify the surfaces of the ductwork and supports to which the coatings had been applied. It was determined that the total surface area coated in Unit No. 1 was approximately 8000 square feet. A slightly lower total surface area had been coated in Unit No. 2.

## 2. Cause of the Event

The work was performed under the Station Maintenance Program and documented in a Maintenance Report. The work performed did not have sufficient controls. This resulted because, at the time, the painting of the ductwork was inappropriately designated to be non-safety related and it was considered to be a routine maintenance item rather than a permanent modification to the plant. Further, the requirement that application of any protective coating materials be conducted in accordance with Specification NAS-1016 was not adhered to.



## LICENSEE E IT REPORT (LER) TEXT CONTINUED ON

APPROVED OMB NO 3150-0104  
EXPIRES 9/31/95

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
North Anna Power Station Units 1 and 2	0 5 0 0 0 3 3 8 8 4	—	0 0 6	—	0 P	0 4 OF 0 7

TEXT (If more space is required, use additional NRC Form 366A 2/ (17))

3. Evaluation of Coatings Applied

Following the initial evaluation, KTA-Tator, Inc. was retained to evaluate the suitability of the coatings applied to the Unit 1 and 2 Containment Air Cooling and Purging System ductwork. The initial coating evaluation program conducted by KTA consisted of three phases as described below:

- Phase I - Field inspection of the coating applied to the Unit No. 1 ductwork to establish the coating thickness and identify locations which bracket those conditions for subsequent sample removal and Design Basis Accident (DBA) Testing.
- Phase II - Determination of acceptability of the coating systems through irradiation/DBA testing at Oak Ridge National Laboratory\*, adhesion testing, and evaluation of results. The samples tested included those removed from Unit No. 1 as selected by KTA, and samples removed from Unit No. 2 in similar locations as selected by Vepco.
- Phase III - Determination of the generic type of coating applied to the Unit 1 and Unit 2 ductwork.

A brief summary of KTA's findings for each phase of their evaluation is as follows:

- Phase I - The coating applied to the Unit No. 1 ductwork is comprised of two coats (red primer, white finish) which possesses poor adhesion to the galvanized substrate. The coating thickness ranges are: primer - 1.0 to 2.5 mils; finish - 2.0 to 5.0 mils.
- Phase II - Eight sample locations were selected from both the Unit 1 and Unit 2 ductwork for evaluation. Four 2" X 4" test panels were removed from each sample location resulting in a total of 64 samples. Two panels from each location were preirradiated prior to DBA testing with the remaining samples DBA tested only. After irradiation, neither the Unit 1 or Unit 2 samples showed any defects with the exception of discoloration. The irradiation also appeared to have no effect on the DBA results.

\*Irradiation/DBA testing performed in accordance with ANSI Standards.

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FACILITY NAME (1):  North Anna Power Station Units 1 and 2	DOCKET NUMBER (2):  0 5 0 0 0 3 3 8	LER NUMBER (3):			PAGE 3
		YEAR	SEQUENCE NUMBER	REVISION NUMBER	
		8 4	0 0 5	0 0 0	

0 5 0 0 0 3 3 8 8 4 - 0 0 5 - 0 0 0 5 OF 3 7

TEXT (IF MORE SPACE IS REQUIRED, USE ADDITIONAL NRC Form 3054a (1/77))

Phase II - (Con't)

After the DBA test, all the Unit 1 samples (32 total) failed to meet the ANSI N101.2 criteria (no delamination and a maximum blister size/frequency of #4 Few). The test results ranged from #2 Medium Dense to large blisters and delamination. Upon receipt of the panels at KTA (two days after the completion of testing), the coating could be easily detached as a complete film on 31 of the 32 panel surfaces.

Of the 32 Unit 2 panels tested, 25 failed to meet the ANSI criteria with results ranging from #2 Few to large blisters and delamination. The seven passing panels ranged from no defects to #6 Few and #4 Few blisters. Upon receipt of the panels at KTA (two days after testing) the coating on the face of 24 panels could be easily detached as complete or near complete films. Two of these panels had previously received passing grades at Oak Ridge. Of the remaining eight, three contained blisters outside of the ANSI criteria. Thus, upon receipt at KTA the number of failures increased from 25 to 27.

In addition to the Oak Ridge results, laboratory adhesion tests of the Unit 2 samples showed the coating to disbond completely from the galvanized substrate at values less than the 200 psi required by ANSI N5.12. Based on the above, the coating on the Unit 1 and 2 ductwork is considered to be unqualified.

PHASE III - The coating systems were evaluated for generic type using infrared spectroscopy. The results are:

Unit 1 Primer - Alkyd  
Unit 1 Finish - Epoxy

Unit 2 Primer - Epoxy  
Unit 2 Finish - Epoxy

EXHIBIT 25

Page 6 of 8 Pages

TEXT // If more space is required, use separator WPC Append JBLA 2/ (17)

Page 7 of 8 Pages

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO 3150-0104  
EXPIRES 8/31/95

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)						PAGE (4)	
		YEAR	SEQUENTIAL NUMBER		REVISION NUMBER				
North Anna Power Station Units 1 and 2	05000338	84	006	000	7	OF	7		

TEXT (If more space is required, use additional NRC Form 255A as (17))

4. Corrective Action (Con't)

An evaluation has been performed to ensure that installation of the wire mesh screen around the ductwork and supports will not create an unreviewed safety question as defined in 10 CFR 50.59. Since the ductwork and supports have been designed to meet OBE/DBE seismic criteria, a seismic analysis is also being performed to determine the impact of adding the additional weight to the ductwork. An initial assessment indicated that no major impact on the existing seismic analysis would result from the addition of the mesh screen to the ductwork. The final assessment will ensure that all supports have been analyzed to ensure that the seismic design criteria is met. Any required modifications to the supports will be installed prior to unit startup. Since the modified system will meet the original design criteria, it is concluded that an unreviewed safety question will not be created as a result of this modification. The UFSAR will be updated to reflect the additional unqualified painting associated with the Air Cooling and Purging System.

5. Action Taken to Prevent Recurrence

Adequate procedures do exist for application of coatings at North Anna. However, to prevent recurrence, positive steps have been taken to clarify these procedures. To ensure that the requirements of Specification NAS-1016 are adhered to, a Site Operating Procedure (Construction Department) and Quality Assurance Department Instruction (Quality Assurance Department) have been developed to specify how coatings may be applied at North Anna. The Site Operating Procedure addresses control of materials, control of tools, control of applications, qualification of applicators, training requirements, and control of documents. The revised Quality Assurance Department Instruction addresses the inspection requirements and compliments the Site Operating Procedure. In addition, a training program on the requirements specified in Specification NAS-1016 and the revised procedures controlling the coatings process has been developed.

Other actions being undertaken are to 1) review Specification NAS-1016 and update as required, 2) augment the Station Administrative Procedures to further ensure that no plant modification work can be performed under the Maintenance Program, and 3) complete the painting documentation review. Also, a consultant has been retained to independently evaluate the adequacy of the existing controls over the painting and maintenance program process.

This report will be revised if any significant new information becomes available.

EXHIBIT 26 —  
Page 8 of 8 Pages